SNAPSHUTS IN CULUK--USL ANT CAMERA:

Minicam

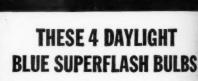
MARCH, 25c





NEW PROCESS MAKES COLOR NEG TIVES -- NOTE REVERSAL OF COLORS





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FOR DARKROOM USE AND EMERGENCY "BLACKOUT"

The new Wabash Blackout bulb fills darkroom lighting needs, as well as those for emergency blackout lighting. Lined with pure silver, it reflects a soft red light downward. Coated with "silicate black" to prevent light leaks. Each 45c. See your dealer.

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The new Bulletin on "Floshing color"—just issued—gives you on exposure data and tables on its Kodacolor with daylightblus flash bulbs. Write for your of Wabash Photolamp Corp., B'kiya

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Some Notes On Paper

TRE are two outstanding papers for protion printing. One is Brovira. One is

me made by Agfa Ansco.

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this a remarkably easy-working paper, pertwide latitude both in exposure and deent. Its deep rich blacks and sparkling the are frequently seen on salon prize-

the pleasing warmth of tone so often in good portraiture. But many phomuse it for all their prints. It, too, is by easy to work with.

r dealer for both of these papers in the grades and surfaces you want. Agfa linghamton, N. Y. 100 Years of the Photography.

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EDITED BY WILL LANE, A. R. P. S.

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"Military Operation"



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Sirs:

This military maneuver is being seen all over the country these days. The cigar is likely to be present only around pay day, of

Building an army is supposed to be almost as hard as threading a needle.

DATA: Speed Graphic camera 31/4x41/4, Agfa Super Plenachrome Press Cut Film, 1/1000 second at f22. One Wabash 40 synchronized flash lamp was used at the camera. DICK HANLEY. Worcester, Mass.

"Closeups Come Easy"

I passed up a lot of good picture ideas because I considered close-up photography a sub-

MINICAM PHOTOGRAPHY (TITLE REG. U. S. PAT. OFF.), PUBLISHED AT 22 E. 12TH ST., CINCINNATI, O. EDITOR, WILL LANE. A. R. P. S. BUSHESS, MANAGER, A. M. MATHIEU, EDITORIAL ASSOCIATES, HENRY CLAY GIFSON, HENRY HOLMES SMITH, CONTRIBUTING BEDTORS, JOHN HUTCHES, MANAGER, A. W. M. S. P. S. BUSHESS, MANAGER, A. W. M. S. P. S. BUSHESS, MANAGER, A. W. S. BUSHESS, MANAGER, MANAGER,

Scenario

ject that would require more experimentation than I could pack into my spare time.



The other night while reading some old issues I ran across the statement, in a MINICAM that a spectacle lens placed in front of the camera less would give a sharp picture if the subject were placed at the focal length of the spectacle less, provided the camera were set at infinity.

I had an 18-inch spectacle lens so I set my Contax diaphragm at f22 and fired a Wabash 0 bulb, with my shutter open. The result, which I inclose amazed me, not because it proved to be a gem of composition, but because of the amazing depth of field which showed, not only the two hands, but my three month old daughter's face as well in fairly sharp focus. I aimed the camera using nothing but the viewfinder, but got exactly the field I wanted.

Thanks to MINICAM I will make a lot of closeups hereafter.

H. MARTIN GLENN.

Elinwood, Kansas.

"Ne Dream Women"

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117

MINICAM certainly is "the" foto magazine, but, I agree with W. H. Minnerly (January issue), it is going highbrow.

Let's have less regurgitation anent alleged "exciting" (??!) qualities of frigidly aloof dream wimmen mugged by cameraless cameractickers; but let's have more Data Sheets, more of that swell T-T-N column, and more practical stuff along the lines of those fine ord articles on spoon measurement, Big Berthas from Little Minnies, how to shoot Kodachroms, how to double your speed, high key, low key, variable contrast developers, etc. (And those fine "How to Builds." too.)

LEONARD BURNETT.

Berlin, Mass.

"On the Beam"

Sirs:

I was quite surprised to see your article on the glamour of "Feet." Apparently, our local

NEW SURVEY

By a Leading Photographic Magazine



Again Proves

OVERWHELMING POPULARITY



SCREENS

(Reg. U. S. Pat. Off.)

What is probably the most extensive unbiased survey ever made of the buying habits of camera fans was recently completed by a prominent, large-circulation photographic magazine. Thousands of readers were asked which makes of screens they owned. The replies showed:

These Readers Own More Da-Lite Screens Than All Other Makes Combined

You, too, will want the superior performance that only a Da-Lite Screen can give—the brighter. sharper pictures of Da-Lite's specially processed Glass-Beaded surface—the easier operation of Da-Lite's simpler, more efficient mountings—and the longer service of Da-Lite's sturdier construction. Don't accept imitations! Ask your dealer for a genuine DA-LITE—America's most popular screen! Write for literature!

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Shoot COLOR INDOORS with VICTOR

Lighting

There are several VICTOR Twin Units like the No. 420-5 shown here—for No. 2 flood lamps—and many clamp—on models, too, with white-coated, high efficiency, steel "Diffuser - Flectors" that are ideal for lighting color subjects. VICTOR provides a complete line of units for both flood and flash lighting at reasonable prices. See them at your dealers or write for our new, free instructive folder describing all the popular VICTOR models.

Use VICTOR Lights for Kodachrome stills or movies—to be sure of best results.

J. H. SMITH & SONS CORP. 323 CONTAX St.

camera club is "on the beam, too." The subject for our monthly competition is "Feet" My submission (enclosed) got first prize.



Our next competition is "V for Victory,"

Percy S. Shore.

Saskatoon, Canada.

We're Getting Together

Sirs:

Your picture of three bears titled, "Looking for a Fourth," inspired the enclosed.

One thing I like about MINICAM PHOTOGRA-PHY is its very intimate character. Every reader (anyway I do) feels like it's a couple

CONTROL'



"THE PAPER THAT GIVES COMPLETE CONTRAST

GEARMASTER

For all movie
and still cameras,
GEAR MASTER
is the last word
in tripod heads

ictory.

Looking

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HORE

New to the amateur but an old, tried and proven idea to the professional, the Granmaster offers more in performance and tripert efficiency than the old style, conventional, pan till, handle operated head. And pan shots with Granmaster are perfect because they are made mechanically.

nd otherwise interfere with the smooth
Camera? Why not have the efficiency of

GEARMASTER when it costs no more? Write for our folder describing the tripod head that has set all photographic tongues a wagging, and then get a GEARMASTER for your very own. You will marvel at its appearance and performance and wonder how you ever got along without it. Owners of small still cameras such as Leica, Contax, Retina and Bantam will be especially appreciative and all movie camera owners will give it their immediate unqualified approval as the finest and most versatile tripod head made. \$17.50 including Excise Tax.

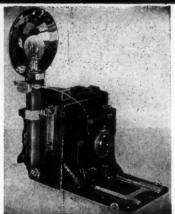
Write for Descriptive Literature

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Western Representative: Frank A. Emmet Co., 2707 West Pice Street, Los Angeles, California

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FLASH . . with Kalart's new Automatic Speed Flash. The only mechanical, self-cocking, universal synchronizer. Truly automatic, requires no winding or cocking, sets itself for the next exposure. Nothing awkward or bulky to hang on your shutter. Performance is always dependable. Price, \$19.95. See both at your dealer's!

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Please send me your new free catalog, "Kalart-for Better Pictureg."

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Address	 **********	***, * *********	
City	 	State	

of fellows getting together to talk over each other's problems.

HAROLD R. STERN.

Brooklyn, N. Y.



"It's a Cinch"

Sirs:

You can see from this that nature has been advised that "V" and all it stands for, is a cinch.

TRILLY
SCHUTTLER.
New York City.





ALL RIGHT! ALL RIGHT! . . . I'LL SNAP YOUR PICTURE, BUT GET IN A GROUP . . ."

"lest Yet"

Sirs:

each

Altho I am in the advanced amateur class, I do not like long, drawnout, technical treat-

ments of photographical problems.

MINICAM is more like a course of photographic instructions than just a monthly to read and then lay aside. I file mine away and refer to them many times. Should I have to distinguish between any number of issues, I would say that to me the February, 1942 issue is the best yet. "Looking at Pictures," starting on page 19, is one of your finest articles.

In the A.B.C.'s Department, "Camera and Reture-Taking Terminology," (Feb., pages 44-47) you said more in less space than in any article I ever read. Let us have more of this sort of instruction.

W. J. Donaldson.

Wesleyville, Pa.

"Brightest Moment"

Sirs:

Your recent picture, "Life's Darkest Moment," is certainly a winner. My London Salon picture this year is a good contrast; it might be called "Darkest Life's Brightest Moment." I was lucky finding this little model. One day, I went into a tea shop and found her at a table drinking lemonade through a straw. I sat down opposite and received a charming



smile. Soon was taking a series of her eating ice cream.

LANCELOT VINING.

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Compare the optical and mechanical features of various cameras and judge by the real test—the PICTURES they make... On both counts, CONTAX III and Super Ikonta BX certainly stand out.

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CARL ZEISS, Inc., Dept. C-32-3 485 Fifth Ave., New York 728 So. Hill St., Los Angeles



OUT OF THE LAB

TIPS FROM A TECHNICIAN'S NOTEBOOK

IN THE USE of special agents, there is one that is used too little. It is the chemical commer-



cially known as Calgon and to the chemist is sodium hexametaphosphate. Just a few grams of Calgon per liter of developer will completely do away with milkiness in developer solutions due to hard tap water. (Defender Company has called attention to the use of Calgon in their formulas.)

A good print lacquer for protecting prints and increasing their surface luster is sold in ten-cent stores under the name of Wipe-On. Dilute the product with a small amount of acetone and it will spray evenly onto the surface of a print using a moth-type insect spray-gun. When the coating is completely dry it is hard and waterproof.

To wax prints use Ford's furniture polish. It has been found to be very good in practice.

All sorts of special solutions and procedures have been recommended for hypersensitizing films but very few excel in effectiveness the simple method of washing a film in clean water for several minutes and then drying, previous to exposure.

T-T-N

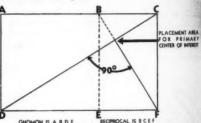
For Warm-Toned Prints. A stunt described a couple of years back by Dr. Kieser in Europe holds certain appeal in these days of utmost conserva-tion. Old and partly exhausted fixing baths are claimed to give the finest quality prints (but not necessarily the most permanent). An old fixing bath prevents muddy shadows, particularly in prints dried by heat. What happens is this: a small amount of silver sulphide is produced from the old fixer which gives the black and white print a warm, rich tone. After treating the prints in the exhausted bath, they may be placed in a fresh bath to insure permanence.

Flemish Toner. If you are using Flemish Toner, be sure to mix the solution in distilled water. Tap water is sometimes the cause of a reddish precipitate which destroys the toning action. Also, do not store the toner near a radiator or any place where it is likely to become heated.

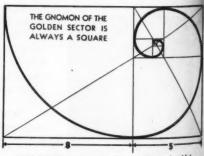
Incidentally, the Eastman Kodak Company has just introduced a liquid selenium toner that give tones quite similar to that of Flemish Toner.

T-T-N

Composition. From a geometrical standpoint the placement of the primary center of interest within a rectangular framework is determined by drawing the diagonal and then constructing a line from another corner at right angles to the diagonal. If this right angle line is extended it will cross the upper horizontal line and mark the position for the vertical line of the "reciprocal" of the original rectangle. Thus, by such construction any rectangle can be divided into its reciprocal and another part called the "gnomon".



In the special case when the "gnomon" of a rectangle is a square we have what is known as the "whirling square". Such whirls are found in natural bodies such as the large spiral marine shells, etc., indicating that the rule for placing the primary center of interest in a picture is as This special sociated with natural phenonoma. case is the rectangle of the golden sector where the ratio of the line forming the base of the gnomon and reciprocal is approximately 5 to 8.



THE "whirling square" the involute of which appears in marine shells and other forms of life.



the clock at these flush bulbs. They were all new in 1941...developments of MAZDA Research that are taking flash photography better in 1942. Several of the teplace former types of G-E flash bulbs.

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had this is in addition to the continual improvement of tisting G-E MAZDA photoflash lamps.

Itas's one big reason why you're always sure of the best in flash bulbs and dependable performance . . . when you say, "G-E MAZDA Photoflash lamps, please."

G·E MAZDA PHOTOFLASH LAMPS

GENERAL (%) ELECTRIC

Micky Portraits

THESE ARE MYSTIFYING UNTIL YOU KNOW HOW THEY ARE DONE

HE HUMAN face has caused a lot of paint-daubing and film exposing. Photographers usually go after a "likeness" while painters, the great ones, like to experiment and to interpret.

Rembrandt was one of the first of the "free spirits". His painting interpreted the personalities of the good burghers of Amsterdam with their cunning, their bungling and political maneuvering as well as their honesty and efficiency, so accurately that he was kicked downstairs. His outraged subjects would stand no more. But he opened the door to great portrait painting.

On the following pages are a series of unusual portraits, perhaps the beginning of a movement of interpretive photography. They show the tricks that have been used by ingenious photographen all over the world in creating certain illusions

The two below, distinctly French in feeling, make use of devices to emphasize the story they are telling. The profile, similiar to the solarization work of Man Ray, literally speaks of youth and beauty. Contrast it with the misty eroticism of, "Champagne Bubbles."

In "Storm Nymph" (next page) we have a portrait in motion. No two viewers could receive same impressions from this print, but they couldn't miss the sound and motion that it suggests. Many a Yankee sailor must have seen such a vision beneath his ship's prow as he swung a line or furled a jib.



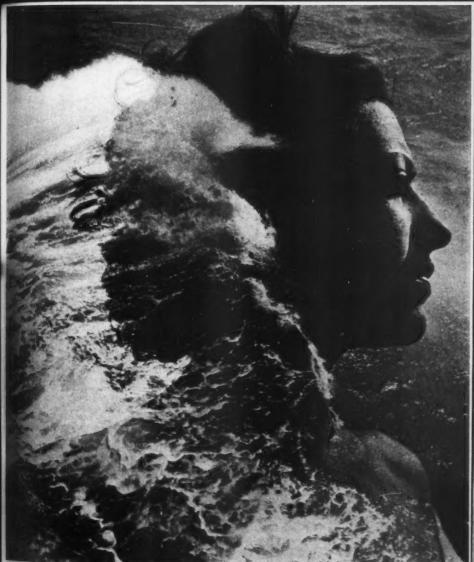
"PROFILE VIGNETTE." The black line outlining the subject is created by solarization, a tricky process in which the negative is developed about half way, exposed briefly to light, and then fully developed.



"CHAMPAGNE BUBBLES." This glitter ing effect was produced by holding a piet of crinkled cellophane in front of the less A light was directed so as to strike the cellophane without reaching the less

Is are Eye-Catchera

NEIL L. KAPLAN



"STORM NYMPH." This is just a simple double exposure. "Accidental" double exposures are common among snapshooters has forget to turn the film between shots. "planned" double exposure, half

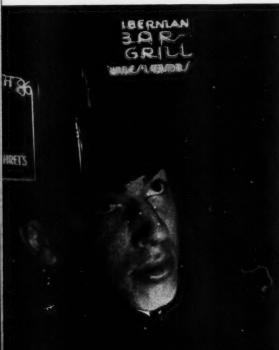
normal exposure usually is given each shot. The proportion may be varied for emphasis. Here the ocean wave was placed so as to emphasize the flow of the girl's hair. The lacy foam suggests a necklace.

NE have ers all usions. ich in mphae proork of h and erotie) we viewfrom ss the Many such a SWUDE

glittera piece he less ike the



"WE'RE SEEING DOUBLE." So many people wear spectacles these days that a portrait is hardly cheracteristic without a man's er woman's glasses included. The subject relaxed and held the glasses in front of her face. The result is a miniature close-up inside one of the lenses, The camere was stopped down to get depth of field. Photographer Aleman's title—"The Gay Spectacle." A straight shot, no camera or darkroom menipulation was used.



"DESTINATION INDICATED." A double exposure is easiest to example when the background is black. On the portrait of a man in the rain, photographer Chester printed in various neon signs, Note in his right eye, "Liquor Store." The procedure in printing a multiple exposure is: First focus the head on a sheet of drawing paper and pencil in the outline of the image. Remove the negative and insert one of the neon light nege tives. Focus this to the desired size and position and make a test exposure. Sketch the important outline on the same white sheet with pencil. Repeat the sketching for as many negatives as desired. Mark the corners of your sketch sheet so it can be replaced exactly in the easel. Replace the first negative and focus as before on the penciled guide. Then replace with a sheet of sensitized paper. Expose the head negative for the proper time. Mark the sheet corners so it can also be replaced exactly in the easel. Remove and put it in a light-tight drawer. Replace with the penciled sheet and focus the neon sign negative to the desired size and position. Then put the sensitized paper back in the easel and expose for the sec ond exposure, and repeat for a ditional negatives. Develop Develop .



"MYSTERY." This double printing is simply an enlargement from two negatives on one sheet of paper. The photographer (Kesting from Black Star) very cleverly placed the curtain so that the left eye appears to be peering through.

theet thing ired. tetch actly first a on olace uper. the corand Remand o the Then is seen and



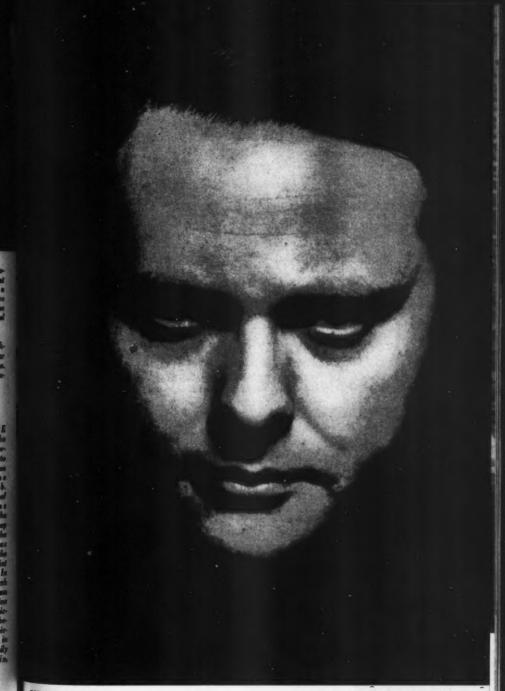


MIRRORS not only offer an endless variety of distortion, but you can see in advance exactly what you are shooting. If the focusing is done with a range-finder, there is no problem; if the distance is estimated or measured, it should be equal to the distance from lens to mirror to subject. By Mared Graner.

THE PLAYING CARD was made by photographing a Mona Lisa reproduction with a sheet of desiglass suspended horizontally in front of the less. The leaves pinned in the upper corners of the picture indicate the suit of spades.



"PALMING THE QUEEN." This is the sort of thing that dinarily is left painters; in this ca it's a well-done double-printing job First, the picture the hands we printed, dodging center so as to l it light. Then head negative printed, dodging outside so as to p only the center. any double print se as this, the problem to keep a soft between the two tures. If the area tween the two | tures is dark, as this case, it is easily done. By Balkin from Monkmeyer.



"STYGIAN MASK"

By GEORGE KARGER

INS SINISTER looking head was obtained in means of an extreme contrast. First, from the original negative, two new retires were made, from contact positions, one showing only what appears in print as highlights, the other

only the outline of the shadows. Each step increased the contrast and yet more contrast was added by reducing in Farmer's Reducer. The print was made from the two negatives double printed. The result has the effect of a charcoal sketch,



"CHILDREN OF THE WAVES." A diffusion glass placed in front of the camera lens by Tatsumma produced this underwater effect.



"PORTRAIT IN MARBLE." Reticulation sometimes results accidentally when old film is used, or if film is developed in a solution that is too warm. The result is like a portrait printed through a texture screen, except in this case, the screen is right in the negative, and the design conforms to the lines of the picture, creating a much more effective result. Reticulation is not easily controlled, so the negative given this treatment should be one that may be risked. It's a good idea to take a number of shots of one subject for experimenting. The negative may be developed at about 90° F., decreasing the development time because of increased temperature, and then quickly placed in a cold fixing solution. Use plain hypo without hardener.

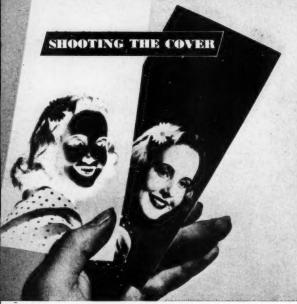


"MOONLIGHT WAVES" is similar to "Storm Nymph," at the beginning of this sticle, except that here not a wave, but a water-pattern is superimposed. No dodging is necessary in this type of picture betwee each negative covers the entire print, and there is no problem of a separating line between them.

It is a great deal of fun, of course, to try our equipment to see what it will do.

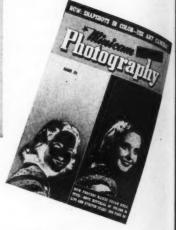
After learning the technical side of these photographic tricks, the next problem is to use them appropriately; that is, in every case to select a particular device not just to be tricky, but in order to express a definite mood or idea. No one photographer has yet succeeded in exhausting the possibilities of his camera in creating interpretive pictures. These are a starting point for the photographer who wants to experiment with the unusual. END.

COLOR



THIS MONTH'S color cover shows the appearance of a Kodacolor negative and the positive print made from it. Kodacolor film was not available at the time the picture was taken, so Kodachrome was used. The negative and positive prints on the cover were reproduced from Wash-Off Relief color prints.

Of course, actual snapshooting in Kodacolor is *simple*. You buy a roll, make your snapshots, send it to Eastman through your camera store, and you get back color



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negatives. Then you pick out the negastives you like and send them in and get color prints . . . and all very reasonably priced, compared to color prints by other methods. (Prices, etc., are given in the (Page 92, please)

THE SEPARATIONS: NEGATIVE PRINTERS



BLUE PRINTER—This shows the great amount of yellow present in face and lips.



RED PRINTER—This gives the basic color to the face and gradation to the background.



YELLOW PRINTER—Indicates the background will print almost a solid blue.

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DIRECT COLOR PROCESSES

By C. E. K. MEES

URING the last few years, the public has shown a greatly increased interest in color photography. Approximately three-quarters of the home motion pictures are made in color, and more than twenty-million still pictures are being taken in color this year.

I think that if I were to ask the average man in the street, however: "What is the status of color photography?", he would say: "Oh, you can make photographs in color, but we have not yet got real color photography." And if I cross-examined him as to his meaning, I should find that what he was thinking about was the production of prints in color; that he felt that to achieve real "color photography," it should be possible to load a camera with a film and then, after the film was developed, to obtain from it a color print, just as a black-and-white print is obtained from an ordinary film exposure.

Three Primary Colors

Processes of color photography involve invariably the preparation of three pictures, each taken by one of the primary colors-red, green, and blue-violet-and then their recombination to form the final color picture. To produce color prints, the pictures are combined in the form of dye mages, each of the images being formed of a dye having a color complementary that by which the picture was taken. The picture taken by red light is printed in a cyan (blue-green) dye, the picture taken by green light is printed in a magenta dye, and the picture taken by blue is printed in a yellow dye. The three separate pictures may be taken successively

through suitable filters or simultaneously in a somewhat complicated *one-shot* camera, in which a system of reflectors splits the light from the lens to form three images, or by means of a *tripack*.

Tripack System

The early development of tripacks is dealt with in Chapter IV of E. J. Wall's "History of Three-Color Photography." He ascribes the first suggestion to Ducos du Hauron, from whom came suggestions for almost all the systems of color photography which have been developed. In 1897, du Hauron described an "Apparatus with a single dark slide and with a single objective procuring the simultaneous obtainment of the three phototypes; in other words, dialytic selection of the light rays by an alternation of color filters and plates or sensitive films, formed like the leaves of a book or polyfolium, placed in the dark slide."

In this system, a pack of three films and a yellow filter are used. The objection to these tripacks is poor definition. The light passing through the front film becomes diffused, and since this is necessarily separated from the green- and redsensitive layers by the thickness of the film base, it is difficult to get really sharp pictures. To get the real advantage of a tripack, it is necessary for the three sensitive layers to be almost in contact; that is, the three layers should be coated one over the other so that the distance between the blue and red layers is a small fraction of one-thousandth of an inch. Tripacks of this type were suggested in the early lit-

(Page 93, please)

NOT THE LIGHTS BUT THE SHADOWS

A NEW WAY TO LOOK AT PICTURES

By G. L. HAWKINS, F.R.P.S.

IGHT attracts the eye. Man, by instinct, seeks it. The brightest thing in a scene gets the most attention. The area of greatest contrast, in a picture, is the center of interest.

But we cannot understand pictures by light alone. The shadows—their size, shape, and distribution in the picture-furnish a new approach to composition

The shape of a shadow is, as it were positive whereas the shape of the related sunlit area is negative. Note the sketche below.

In Fig. 1, we comprehend at once the shape of the shadows as being those of a row of boats. We do not, in the same way, obtain and retain an impression of the shape of the sunlit area. In Fig. 2, however, where the tones are reversed, the sunlit area being black, we at once get the impression of the shape of that area as a series of arrowhead-shaped projections.

The significance of this simple illustration is that, whereas light tone attracts by virtue of brilliance, dark tones or can shadows attract by their shape. We do not forget the importance of highlights when we point out that it is easier to comprehend shadows. The shadow areas furnish the key to the picture. Most good pictures contain a greater total area of dark than of light. It is good practice to

IF YOU should glance at this and close your eyes, your memory will retain an image, not of a row of rowboats, but of their shadows.

ROWBOATS

FIG. 1

IN THE NEGATIVE, the sunlit area being black, we at once get the impression of the shape of the rowboats. Our eyes see negatively.

ROWBOATS

FIG. 2



STEPS IN THE SUNSHINE

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FIG. 3

A NEW approach is presented in this article, a reversal of customary thinking. By means of this new mental attitude, a picture of houses and steps, becomes, first of all, a collection of bright and dark patches to be arranged into an attractive composition. For the picture from which this print was evolved, see Fig. 9.



"VILLAGE AFTER SNOW. FALL" FIG.1 da

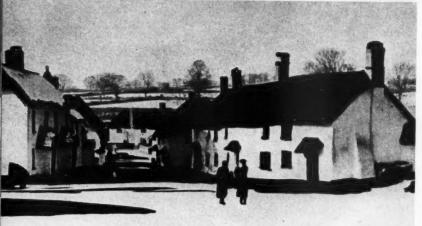
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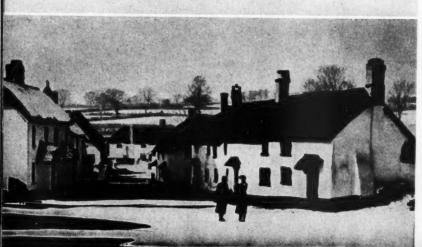
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OMITTING foreground s h a d o w leaves coltages suipended without support. FIG. 5



DARK tooks at the base improve perspective. FIG. i concentrate on the arrangement of the darker tone areas of the picture.

"Village"

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FIG. 6

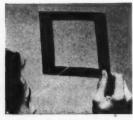
Consider the village subject in Fig. 4. It is a simple street scene after a light fall of snow, and the importance of the placing of the dark areas, consisting of shadows on the road and thatched roofs above, cannot be over-estimated. This applies particularly to the foreground shadows.

Used properly, foreground shadows afford a base for the tone and material weight above, and induce a binding or enveloping quality which holds the whole composition together.

Observe how the omission of the foreground shadow in Fig. 5 leaves the cottages on the right "in the air," and how, with the mass of dark tone at the base (Fig. 6) the composition gains strength and improved perspective.

If you have never worked this way in your outdoor photography, thinking firstly in terms of shade and shadows, try it next time you are out seeking landscapes or street scenes. Instead of busying your mind with the bright things of the chosen subject, forget them for a moment and look at the dark areas. Compose with a view to getting the broad masses of dark tone in the right places. You will find that the merest glance will suffice to show whether the main highlight (usually the center of interest) comes in a suitable place.

The picture-maker must see his sub-



USING a cardboard viewing frame, with one speciosed, shows the area included within the ficture. For an average camera, the opening thould be about 4x6 inches in size and held inches from the eye. A piece of string may be used to keep the correct distance. FIG. 7

ject firstly as an arrangement of tones, tone masses, light and shade, elements which he will transpose to paper in two-dimensional form, as a design, as chiaroscuro, an arrangement which offers an outward appeal by virtue of good composition and values which do not solely depend upon the material of the picture or its inner aspect.

Use a Viewing Frame

Then there is the question of what part of the subject offers most as a picture. A viewing frame is a great helper, or a card with a square cut out of it, as in Fig. 7, may be used. I also use a card frame in which is mounted a sheet of celluloid upon which has been drawn in waterproof India ink a series of frames each representing the coverage of one of my lenses when the "viewer" is held in the hand at a fixed, and known, distance from the eye. A glance through this "window" enables me to decide at once which lens is needed.

On looking down on a subject such as Fig. 9, (bottom, p. 26) we first see no more than a collection of dwellings, rooftops, and chimneys. Admittedly, the subject matter is attractive, and it is quite possible that a picture might be made of a shot like this. Such a picture may offer full value on the basis of material content and, at the same time, of course, the composition may or may not be good.

Instead of looking at such a scene as a cluster of cottages, let's discard all thought of the material content of the scene, and regard it as an arrangement of tones. As a pattern, we find that much is offered for a picture.

Chiaroscuro

We try to see, first, only the darkest darks and the lightest lights. By so doing we see what broad effect of chiaroscuro is offered. The word "chiaroscuro" is very interesting because it means literally "light and shade." A familiar word in the vocabulary of painters, it is even more apt for photographers.

Laying and planning of the black and

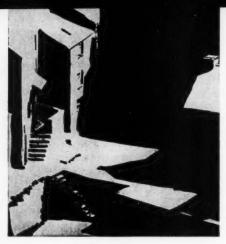


FIG. 8
THE CENTER of "Village Scene" (below) is
the most interesting part. This drawing illustrates in an exaggerated way how the shadows
would be visualized.



FIG. 10
LINE A-B marks the line between shadow and
sunlight. It has greater pictorial significance
than any of the other lines or subject matter.

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white areas can best be done at the time the negative is being composed.

See Scenes as Patterns

Careful scrutiny in this manner, looking at the pattern of tones, results in the discovery that there is, within the scene, a most attractive shadow composition.

Fig. 8, illustrates, by exaggeration, the way the subject should be seen. In Fig. 10, the line of this cast shadow is marked as a line AB. The shadow, and the line of demarkation between shadow and sunlight is of much greater pictorial significance than any of the lines of the subject matter as houses. Fig. 11, demonstrates the point. I have deliberately eliminated



VILLAGE SCENE FIG. 9
How this picture became the print seen on
Page 23, is illustrated in the drawings above.

the shadow, making the scene as it might appear when the sun is more to the right of the subject. Observe how the picture loses the variety and interest that is inherent in the more varied line and shape seen in Fig. 10. The diagonal across the front of the foremost sunlit cottage wall has given place to a vertical, of which there are already several adjacent, and from which the diagonal was a welcome relief. The interesting zig-zag line across the street gives place to a line obviously of less pictorial value and leaves a rectangular area of unrelieved sunlight which is too large and too regular in shape.

I need make no apology for dwelling on this question of variety, and how, in this case, it is attained. Variety is an important picture value.

There are other factors to be considered in this subject. It is necessary to determine, both as to chiaroscuro and material interest, what is essential and what is not, and to work for emphasis of essentials and for suppression, sometimes elimination, of things that are either of limited value or are completely undesirable.

In Fig. 12, I endeavor to show, by means of elimination, those parts or features which seem to me to be the essentials of this subject. They consist largely







FIG. 12 THE THREE essentials of the subject are the zig-zig shadow, the sunlit steps, and the sunlit walls. Eliminate unessentials in viewing pictures.

of: the zigzag shadow, the sunlit steps and the sunlit walls. The first, the zigzag shadow, is a matter of sunplay; light and opposing shadow. The second and third are basically material, aided, emphasized and given potential picture value by the power of direct sunlight.

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Consider, now, the things that have been eliminated, (comparing Fig. 8 with Fig. 12). We are, be it observed, still considering only the extremes of light and dark. The sun shines down on the roofs of the cottages. They are old tiled roofs, cemented and bleached white in the sun and sea air. They are definitely of secondary value. It would have been better if they had not been quite so white—a dull grey, or even tarred as roofs sometimes are.

If then it will improve the composition why not render them in a lower tone thereby adding emphasis to the essential light tones? In principle the same idea will apply wherever there is an unnecessary, or an overbright highlight.

I have suggested how the subject; almost any subject in fact; should be looked at—how it should be considered and its value assessed before the exposure is made. I am not proposing to go into any details here in the matter of the technique of "taking the picture."

It must suffice that I show, by way of completing the argument, my own effort with the subject (Fig. 3). Others might see it, at another time of day perhaps, quite differently, and make of it quite another picture. Such is the case with every subject, and every worker; no two see it the same or present it similarly.

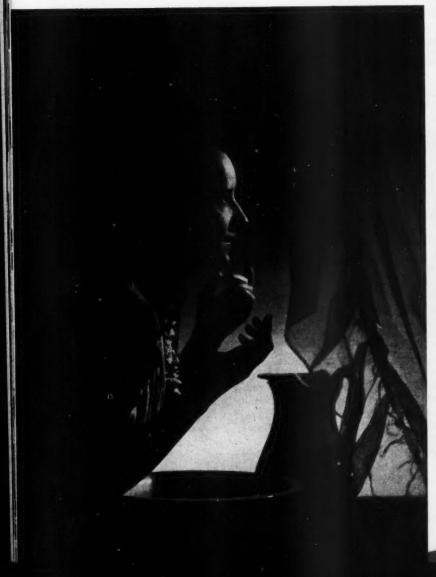
The title "Steps in the Sunshine," can be taken to refer as much to the zig-zag or "steps" of the shadow line (A-B. Fig. 10) as to the steps up the quayside and above. In fact it is a case of presenting a picture with a title that can be taken by the individual in whichever way he pleases, according to his own receptivity and ability to appreciate the intentions of the author.

That ability is not a matter of great importance, for, if a picture has enough outward significance to call attention to itself and demand inspection, it is not of prime importance what the individual reads in it or understands from its inner significance provided, always, that there really is something to look at.

In a future article I shall endeavor to demonstrate, by means of more photographs and black-and-white drawings from photographs, the importance of viewpoint and angle of lighting to photographers who want to put real picture-value into their productions. END.

Mood

GENRE pictures—whether sillenettes, harbor views, or boulds scenes—are dangerous; they en hard to shoot. Feeling is an intengible element. Here the soft Vshaped curtain frame creates the impression of a stage. The lively, perfectly natural bearing of the hands suggests the feminine touch. The spot of light on the beckground and wash basin contrast them interestingly with the dinness of the rest of the picture.



SUMMER NIGHT, 1900

By DORIS WALLACE

HERE the soft, intimate, and nostalgic charm is perfectly expressed. Recalled are the tunes ald lullaby, a walts you used to whistle, street of the village, the faint clattering of rare china. Atmosphere is a pictorial element, like composition or lighting, but less

"Give me

JONES, head photographer at Universal Pictures, Academy Award Winner, Master of Lighting, was given an ultimatum. For six years he had built publicity for Deanna Durbin, while Deanna rebuilt the waning fortunes of Universal. Ray is hardly the person to accept ultimata from any subject; he issues them to a staff of fifty. In addition, he determines the nature of all still pictures released to the press and the fan magazines, playing like cat with mouse on public reaction-luring customers to the box office, and keeping them constantly aware of future reasons for returning to the theatre.

Thus Jones' devotion to the task of

taking all stills of Deanna indicates a stronger obligation than duty alone. Six years ago he rejoined Universal after a four-year absence, to resume where he had left off after a previous stretch of nine and a half years in the photographic department. His arrival was timed almost exactly with that of Deanna, who, at fourteen, was being nurtured by Universal for stardom. He fell into his job with a will, spending long hours in planning ways and means of projecting upon a curious public slices of her then adolescent personality. That he was successful is evidenced by the present growth of Universal.

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Jones is a funny little guy. There is

EVOLUTION OF A STARLET, SHOWN IN EIGHT STILL PICTURES BEGINNING BELOW





e d'Personality,

mething cherubic about his full, young but knowing face, with its uptilted Pinocchio nose, and his rather high-pitched explosive manner of talking. At the camera, though, there is no question as to his complete dominance of the picture or his suave and completely self-sufficient mastery of every detail of lights and camera manipulation. Every fluttery move of his hand or body accomplishes some feat of magic, and every monosyllabic utterance results in transitions in expression that, unnoticed by the subject, are captured by the camera.

He Learned the Hard Way

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He learned how to invoke expressions and moods from corpses, he says, and











surprisingly, that is true. It was not his intention, at the time, to emulate the great masters, Rembrandt and Da Vinci, who learned of flesh tones and anatomical contours from their experiments with cadavers. All he wanted was a job, and his first, at the age of fourteen, was that of photographing corpses. After eight years he found that he could impart life and realism to gruesome inanimate objects by the mere movement of lights from one angle to another. He had no tutor to show him how, no precedent to follow, no reference material to outline the steps to be taken. He just monkeyed with the lights. His success in determining the proper factors are evident in the awe in which he is held, and in the achievements with which he is accredited.

Jones left his corpses to try Hollywood, in the days when Hollywood was not yet the chimerical myth it is today. Then, over twenty years ago, nickel movies were expressively known as the "flickers." He began his career in Hollywood singeing his eyebrows with flashpowder at banquets. Then he graduated into a photographic concession at Mack Sennett's

Studio and to an unimportant job at Universal Pictures. From then on, while moving to Twentieth Century Fox, to Sam Goldwyn, to Paramount, and to Columbia, his prime objective was to return someday to Universal as kingpin. He won his well deserved desire in 1936 and it was at that time that he was stricken with a problem that was initialed Deanna Durbin. From 1936 until the present day, he has felt that his destiny rides with that of Deanna Durbin, because her success has helped to hoist stillman Ray Jones to photographic fame.

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Pictures by Jones of Deanna appeared constantly in print—winsome, charming, yet demure and childlike. Her starry eyes, her sweetness, her expressions, mannerisms, even her costuming became symbols to millions of people. As her star rose, so did that of Universal, and naturally, that of Jones. By degrees Ray's staff swelled to fifty, but he refused to relinquish his job of photographing Deanna. He had swung into the groove—had found methods of perpetuating Universal's stock in trade—the sweetness and youth of their Number 1 star.





Revolt Rears Its Head

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Deanna, though, had other ideas. While at 14 she had been a willing subject, in her second year at Universal she began to indicate her desire for mature portrayals. The box office boom, being due to the attraction of youth, studio policy insisted on its perpetuation. At 16, there were a few upheavals. She wanted glamour—not a lion's share, but just enough to keep up with her growing age. Nevertheless, until a year ago she remained a youngster. Then one day came revolt, too insistent to be quelled.

"Give me a personality," cried Durbin. "I am no longer a child with starry eyes and a demure manner. I am a married woman now—a woman with individuality. Take me away from the naivete of silly schoolgirl roles and make me a woman of charm."

This time there was no escape. Arbitration was not effective against this determination. There was no choice but to change her personality. Unknown to her, the foundation had already been laid for the transition. By degree a gradual change had been taking place, in her stills, per-

mitting the final step into full maturity, but this insurrection was a blow to Head of Staff Jones. It sincerely grieved him to alter his techniques with Deanna to those he had constantly used on others, but had derided as "customary drivel." There had been a constant challenge in holding down glamour and accentuating youth. "Oomph" on the other hand, with its few variations, followed standardized lines.

The situation was comparable to that of a father of the family, rejoicing in the simple affections of his child, suddenly discovering that his child has grown up and no longer belongs to him. In fact, the simile could go beyond that and show meritorious photographic comparison. In millions of families, proud fathers do consistently keep a "growing record" of photographs of their children, which stop once maturity is reached for lack of the vital interest and pride found in photographing the child. Those fathers, though, are accountable to no one for their technique but their families. A movie photographer caters to an audience of millions. In both cases, the subject is there to be







RAY JONES, head photographer at Universal Pictures, rejoined the studio when Deanna Durbin was 14 and just starting up the road to stardom. Smiling, talking, kidding, he works Deanna up into a hearty laugh. Shifting his lights, here diffused to soften the edges, he completes his basic light setup before touching the camera.

THEN the light meter comes into action. Jones, like many other movie still men, uses long exposures on the slower films. "I want the best possible defition . . the reason for slow film," he says.

NOW he cajoles Deanna into the approximate position for the picture he has in mind. "It's stars, not feathers I want in your eyes," he cracks, "don't let this birch fence make you feel like an Indian Maid."



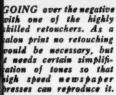




READY for the shot, Jones has to be sure his subject is in a "holdable" and comfortable pose or he may get movement on his long exposure. Note that the lights are diffused. He still uses a "bulb". A CHANGE of angle on his ancient & x10 Century View, not unlike the equipment in many a small town studio. Ray Jones believes that simple equipment is just as capable of getting fine results as the most expensive. The difference is in the speed and ease of manipulation.

NOT QUITE right yet. The pose is good but more action is needed. Deanna waits while a large studio fan is hauled in, and the breeze in her hair makes the picture. Notice the convenient film holder rack on the right. An idea for anyone using large film holders.







EVEN as you and I... Ray Jones does some last minute spotting before wrapping and mailing out. The spotting that the professional does is usually not as meticulous as the amateur's for the engraver's half-tone screen is more kind than our friend's searching eyez.



HERE is Ray Jones' own private gallery of his shots that have been reproduced as magazine covers. He feels that Deanna Durbin has probably more "cover appeal" than my one in the country. He knows what the public likes in pictures and he gives it to them.



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"WINDBLOWN" is one of Deanna Durbin's favorite pictures and a very popular one with her fans. Taken in the studio with a large fan blowing her hair. No attempt was made to stop the motion of the hair, as this was part of the effect. Crosslighting was used with a ketch light on cheek. One soft ketch was thrown on the background and another on her hair from a medium height. Taken from a low camera angle.

photographed, but the stakes are high in the movie industry, and the audience as temperamental as any prima donna.

Evolution of a Glamour Girl

What, then, thought Jones, would be the reaction of the public to a new Deanna—not the simple schoolgirl, but the girl with sex appeal? Would the audience shift the other fields or would it, like that proud father remain loyal to the mature personality that arose suddenly and strangely to assume new proportions?

There must be a sudden transition in make-up, in clothing, in expression, in posing. Youthful eyebrows must be narrowed and arched to imply allure. Hairdress must swirl away, rather than follow the contours of the face. The lip line must be narrow, voluptuous, and shiny, rather than full, dark, dull and babyish. High or square necklines must give way to low "V" necklines that imply maturity. Clothing must be slinky instead of full and youthful. Expressions must be filled with implication rather than denote innocence. Poses must follow the "S" curves of Hogarth rather than the upand-down-just-anyway lines of impromptu youth. Hardly an easy switch-over to pull on a guileless, unexpecting public, thought Iones.

Then there was an even greater challenge of lighting arrangements. Would the techniques that had been used to accentuate the characteristics of Deanna still be suitable, or would they require changing?

Types of Lighting

For the schoolgirl, Crosslight only had been used. This facilitated full-faced, youthful expression. Actually, says Jones, there are two major types of lighting suitable for movie still photography. One, Crosslight, consists of a hot key light at one side of the subject with a filler-light on the shadow side. This type of lighting is kind to round faces.

The other, Butterfly lighting, consists of a hot key light directly over the top

of the camera throwing a shadow under the nose and chin of the subject. Butterfly is excellent for long faces where the nose is not too long, but is detrimental to round faces, except where used for predetermined effects where beauty is not the issue. Butterfly lighting had long since proved unflattering to Deanna. Her face, round and innocent, looked groteque with heavy under-nose shadows.

Determined to discover what future photographic courses would be followed, Jones spent long sessions photographing Deanna. One lasted eight days. Every conceivable change was tried, and comparison dictated methods to be used. It was during one of these long sessions that we followed Ray Jones around his gigantic, beautifully planned, munificently equipped portrait gallery. That gallery is a dream converted into reality. Every conceivable convenience, every desirable piece of equipment is there, so cleverly designed that a button makes it appear where wanted. Gorgeous backgrounds, twelve of gigantic proportions and of every shade of color in heavy velour or velvet, slide from concealed crannies to undrape where wanted. Flats portraying every type of indoor or outdoor scene slide from concealment to create a background. Scores of lights are instantly accessible. Props beyond description or number slide from a balcony into position. Stages and elevations of every type, boxes, balconies, staircases, corrals, fences, grilles, pillars, frescoes, screens, coils, wagon-wheels, logs or furniture can be located and placed in a fraction of a minute. Rotating chairs and props permit control by the photographer of every pose and position of the subject, and there is little need of creating illusions when all necessary materials are available to create the actual scene. It was the lighting facilities that impressed us most.

Two Lights Only

"Lights," says Jones, "are lights." You can get fancy ones that are easy to (Page 88, please)

HOH



"SMOKY JOE." Here the action that thould be depicted whenever possible is provided by the cigarette smoke. Joe's jersey is an old canvas glove.

"GROUCHO," as inspired by a scrubcloset brush. Paper eyes were fastened behind the eyeglass lenses with rubber cement. Photos by Wm. Conway.

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AND HOW TO MAKE THEM

By WALTER E. BURTON

AFTER a day at the morgue, do you often feel the need for gargling a giggle or bursting out with a belly laugh? In these trying days, there is more than ever a need for humor, on which there are no priorities or rationing limits.

If reading the funny papers, studying the window of a woman's hat store, and tripping your mother-in-law as she starts down the cellar stairs don't satisfy your thirst for hedonistic amusement, why not drag out your snapshot box and try your hand at making still-laffs? Never heard of 'em!

Some of the pictures tagging along with this article are examples. "Smokey Joe," for instance—a bit of camera cartooning that one Bill Conway turned out right after a New Year's party. "Grou-

cho" by the same perpetrator is another example of how wacky this may become.

"Smoky Joe's" whiskers is a dish mop; his eyes, sunglasses backed by black paper; hi nose, a pot-lid knob; and hat, a pottery doo-dad. "Groucho's" brush backbone is supported by a beer bottle (empty). The necktie was borrowed from the photographer. An improvement might have been the placing of the galoshes so the tops wouldn't look so empty.

Making still-laffs is neither complitated nor costly. The main requisites are a slightly dizzy frame of mind and an easily-cultivated knack of shaking the house for props. You also will require such minor things as a camera, a couple of lighting units, a table, and a place to work.

The main idea is to combine more or less ordinary objects into something funny. Often a handful of bolts, nuts, bits of wire, clothespins, and one of grandpa's old teeth can be assembled to represent a screwy animal, or a face that may resemble someone you know. The creature thus created may be shown engaged in some activity that would be funny if it really happened. Thus, a wire-brush beetle might be photographed in the act of nipping a bite out of a bowl of diningtable fruit.

On the other hand, incongruity often is the keynote of still-laffs. Commonplace objects may be combined to produce a startling effect.

The making of humorous still-lifes can be carried to almost any extreme. Individual pictures like those shown are easiest, once you have a central idea; and that idea need not be full-formed when you start. It is surprising how it will work itself out once the gears in your head start grinding. Somewhat more ambitious is the camera cartoon that involves the making of a series of pictures of funny set-ups that tell a simple, humorous story. Thus the wire-brush beetle mentioned might be shown carrying out some goofy adventure such as this: Scene 1—It approaches a bowl of fruit on the dining-room table.

Scene 2—It takes a bite out of an apple. Scene 3—An apple worm, more ferocious-looking than the beetle, sticks its head out. Scene 4—The apple worm takes a bite out of the beetle in the region of the posterior set of bristles. Silly, isn't it? But it's a good way to keep from worrying about world troubles.

Still-laughs can be practical, too. You may have seen advertisements illustrated with them. And some national magazines have displayed similar pictures, in color.

The technical aspects of making such pictures are essentially the same as those involved in making any kind of table-top or still-life shot. For lighting, you need nothing more complicated than a couple of small floodlight units using anything from a 60-watt household lamp to a No. 2 or No. 4 photoflood. A spotlight producing a rather sharp beam is handy but not essential. Often such a light can be employed with dramatic effect by producing dense, sharp shadows. In handling lights, strive for a humorous or striking result. Thus you may employ a single lamp placed low in front of a face made from odds and ends, to produce an upward lighting that gives an eerie or grotesque effect. Try a few color shots of funny set-ups, and sprinkle them through your slide collection to relieve the monotony. They have tremendous possibilities for making striking titles for either motionpicture reels or color-slide series.

bridge

Normally you will give full exposure, full but not excessive development, and print for detail. However, there may be occasions when you will want to produce high-contrast or silhouette pictures to create some particular effect.

Once you get off on the right foot, you will be able to see funny pictures in almost everything. Scrutinize store windows, the household junk box, dime stores, and the local sewing kit for ideas. You never can tell when one will turn up. Even at the breakfast table . . . Say! Here's a prune that looks a little bit like the landlord. Hey, Pinkie, whaddid you do with my Argus?



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THE PICTURE of the bridge (top) did not look like much in itself.



Adding the clouds, center, and the tree silhouettes, bottom, results in the enlargement, above, which is much more interesting than the first, naked, cloudless, foregroundless shot.

READY-MADE FOREGROUNDS

ly WILLIAM F. CARR









CLOUD negatives are easiest to use when the horizon edge fades out to clear white as in the above. They require no special dodging where the sky and horizon line meet.









IT IS HANDY to have some stock silhouette negatives. Photograph window frames, archweys, etc. with plain sky beyond. Use positive film or develop negatives for maximum contrast. I you don't want to go out and shoot clouds and silhouettes for double printing with your negative, you can obtain a store set (Stellar Preprint Negatives, Series 1A, 16 negatives and directions, \$1.00 from Verschoor Corp., 1400 No. Main St., Ann Arbor, Michigan). To dub in either clouds or silhouette foregrounds, make a double exposure on paper while enlarging.

Barbara Morgan PHOTOGRAPHS THE DANCE



STARK REALISM. A single figure is brought to justice by Martha Greham and her dance group in "American Provincials." Overhead light on Miss Graham and faces of wall of dancers. Light thrown or cyclorame to point dramatic importance of solo figure. Exposure at 1/700 second.

By ELIZABETH McCAUSLAND



BARBARA MORGAN.
These pictures are from
her book, "Martha Graham: Sixteen Dances in
Photographs." Duell,
Sloan and Pearce, publishers, (Price \$6.00).

T'S spinach. That's about what Barbara Morgan will say if you pin her down on "movement blur." There's no one way to photograph the dance. Sometimes you need to "freeze" motion. Sometimes you need "movement blur." It's foolish to imagine that one system will successfully express every kind of dance. If freezing motion best portrays the dance you are photographing, O. K. If "movement blur" does the job best, then let movement blur. But stop thinking that technic makes the photograph. It only helps.

Though she uses both technics in her dance photographs, Barbara Morgan sees no merit in reducing dance motion to a frozen calm it does not have in the eyes of those who see it. Timing to get the picture and timing to express the picture are two vastly different



LYNCHING. Side lighting used with care, to keep all light off front of figures. 1/800 second with 4 No. 31 G. E. flash bulbs. An exciting moment from Weidman's dance, "Atavisms." The dancers are Pete Hamilton and Beatrice Sechler, two members of the Martha Graham Dance Group.

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ng he nd nt things, she states with great vigor, and this applies equally to lighting. Movement blur is often needed in specific areas of a dance photograph, on the circumference of action such as hem to skirt, tip of toe, end of finger—which is the way we see these move in the dance. To make the dance photograph express the feeling the dance gives its audience, blur is part of the picture. To produce blur, the dance photographer exposes and focuses accordingly.

Here Barbara Morgan places herself on the side that the photographer is more important than the camera he is behind. Though she owns high-speed flash equipment and plans to use it for special functions, she does not consider the Speedlite a dance photographer's panacea. It is a valuable form of lighting for dances of great frenzy and speed, she says; but it over-freezes motion and gives false movement texture. To study phenomena of motion, it has remarkable possibilities. But the use of such equipment robs the photographer of control of timing, through which essentially the dance photographer solves his problem.

Not the accidental or picturesque interests Barbara Morgan. To preserve the dance's spirit for the future, she seeks to reveal two things: "the fluid architecture of the body, and the combustion of spirit in that architectural frame." Dance photographers generally are after the dance's outward rush and exuberance, she believes, but ignore its inner architecture or form. "The minute they've gotten someone up in the air, they think they've done something," she says, her colloquial speech contrasting amusingly with the seriousness of her approach to photography.

A writer with light, she uses a fluid, impersonal medium which does not tamper with the dancer's personal quality. However, merely to open the shutter and let the camera do the work is futile. The dance affects its audience emotionally, apart from the visual impact of its moving bodies. There are lights, costumes, music, space of auditorium and stage, which all make a definite conditioning. What the camera records without human control is

MARTHA GRAHAM in "Deep Song". Overhead lighting.





BEATRICE SECKLER in "Shakers". Taken at 1/700 second with 4 No. 31 Focal Plane flash bulbs. Two kneeling figures thrown slightly out of focus by opening aperture to f5.7.

a falsification of the dance's truth. To compensate for what is lost of hearing and touch, the dance photographer must become a kind of stage director.

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Barbara Morgan's experience is a valuable guide in the field because she has worked with great earnestness and industry as well as imaginative understanding. She started photographing the dance with a Leica, f1.9 lens, shooting with stage light, at shutter speeds up to 1/1000 second. Then she added theater lights. Wanting a larger negative, she moved on to a Super Ikonta B, 2½x2½, with f2.8 lens, using exposures only up to 1/400 second. She was still working with stage light, but adding photofloods to switchboard light, and, she comments ruefully, with, I might add much trouble."

Trouble is something she took in her stride, just as she took Martha Graham's dance classes in her stride in order to how the dance better. Light and more

light was her cry, yet light which she could control. Here she ran up against mechanical difficulties. One was the need for adapters for Hubbell connections, which otherwise cannnot be plugged into stage Klieg outlets. Working with theater light, she found that she could substitute No. 4 or movie photofloods in the floodlights' Mogul bases, and so obtain more light than with the ordinary bulbs used in the theater. Similarly, to increase illumination, she put No. 2 photofloods into the strips and borders.

All the time she was analyzing the problem of how to use light to reveal the dance's essential form and meaning. Here she differs decisively with the prevailing practice of setting up lights in a fringe around the dance action and shooting head on. The result is, she thinks, flat and uninteresting. Lighting should be planned to suit the particular dance, she declares, and adds, "I study the emotional



ERICK HAWKINS in "El Penitente". Taken outdoors on a hill. Using the sun as specifically as she would an artificial light, Miss Morgan had the dancer leap many times before she shot this photograph. 1/800 second.

effect I want. It may be that all the lights are behind the dancers with one side light. Perhaps I shoot the light onto the floor and the background to bounce back. Maybe I bring a light very close to blast one part of the figure and use diffused light for the rest of the action."

Her work with augmented stage lighting was rehearsal for multiple flash, theater lights having proved unwieldy and inadequate. The two most important things Barbara Morgan had to learn were:

1) to translate into working terms the distance for placing lights from the dancers so that the photograph registers in black and white the picture as she con-

ceives it; and 2) to calculate light angles and shadows so that the interaction of light from many bulbs truly recreates the dance. In theater work, she could see the lighting and judge its effect; in flash, she has had to learn to foresee what will happen when the bulbs go off. She must anticipate the picture as she wants it, then plan the lights to produce the picture she sees in imagination. In instances, this may involve slight choreographic changes so that the photographic restatement will be in harmony with the dance idea.

Sometimes lighting breaks down into zones. In one photograph of the dance, Letter to the World, four motifs had to be



"SATYRIC FESTIVAL SONG", Martha Graham calls this flippant dance. To express its light and frothy feeling Barbara Morgan used "Movement Blur" in the dancer's hair and head. Light was thrown on the background to bring out the silhouette, and side light was used for modeling. Taken at 1/500 second.

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A side and rear light were used, 1/300 second at f8. This striking shot owes much to the incessant repetition of angles.

integrated by means of lighting.

Barbara Morgan's use of lighting to model the dance is based on a vast deal of experience of the arduous trial-anderror kind. Now she uses light almost as if it were second nature. For the young photographer of the dance, she suggests a time-labor- and cash-saving practice, to use pilot lights. These will make all the difference between a lot of wasted bulbs and good pictures, she states. She herself does not use them, having arrived at her control of lighting by the steps described.

Today Barbara Morgan works with a 4x5 Speed Graphic, with f3.5 lens, parallax viewfinder and Kalart coupled range-finder, using exposures up to 1/1000 second. She uses focal plane synchroniza-

tion for speed, with a Kalart Sisto gun and portable "booster" battery generating 18 volts, which she had made. She can shoot eight or nine G.E. No. 31 bulbs if necessary. The majority of her exposures are made between 1/500 and 1/1000 second, though sometimes they are as slow as 1/100. She finds Panchromatic makeup a great help. If you want to, use filters; she doesn't.

After all this, Barbara Morgan cheerily comments: "The place to photograph the dance is the real headache." Rent for theaters is no more provided for in the budgets of photographers than in the budgets of dancers. Studios are likely to be too small or ill equipped for drawing large amounts of electric current, to have

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"American Document," expresses the renascent art of the Dance as interpreted by Martha Graham. Straight lighting at 1/700 second.

curtains too light or too dark. Wall and floor make ugly junctions, producing a line which cuts the figures in two. Dark hair won't show against black curtains, which absorb the dark tones. White curtains and walls are best, though they make too exaggerated shadows if the photographer must work close to them. Ideally, the floor should be a light middle gray. As for photographing the dance

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outdoors, that's a triple headache. Trees, roofs, stray houses, cows, people, all intrude. A hilltop is best.

Through all the technical and practical wisdom garnered from her years of experience, Barbara Morgan holds fast to one belief: it's not how you do it that matters, but what you say. It is the great intangible of all artistic creation. And as always the proof is in the looking. END.



* ONE-FAMILY

By ORMAL I. SPRUNGMAN

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BABIES cause the exposure of more film than any other single cause.



If there is talent in your family painting, dancing, or even knitting—write a film story to tell about it. People at work are always interesting.



THE EVERY-DAY events are the ones that furnish the heart of your "family scenario." One typical family activity is Dad reading the funnies to the kids or Sister reading to Sis. The point is to take not just a single picture, but to film the entire activity beginning with Sis tugging at Sister's skirt until the final fadeout with Sis sleeping and the cover of the book, in a close-up, being slowly closed for the fadeout.

ESPITE widespread interest in travelog, scenic and wildlife filming, many cinecam-addicts shoot only because they want a family record of children and relatives. Their results are super-thrilling to themselves, perhaps, but inevitably boring to everyone except members of the immediate family. This seems illogical, since people and the things they do certainly offer interesting possibilities. Perhaps it is the manner of filming and the type of presentation which point the way to successful family movies. How, then, can a cine fan make his family shots of interest to outsiders?

One way to assure yourself of being obnoxious is to go in for this "pose pretty" stuff, with all eyes toward the camera. Another way is to tolerate clowning before the lens. Neither is conducive to good picture making and both will destroy the effect of serious work.

A family film should be a community affair. Go into a huddle with the members of your kin and swap ideas until some sort of scenario evolves. Put it down on paper, scene for scene. Perhaps it might be a typical day in the life of the Smith family, and you might call it, "Up Our Street," or, better still, "Down Our Alley." From the title you surmise that it is going to be a record not only of your family but perhaps of your neighbors. Most of your neighbors will get a kick out of acting or, rather, just being natural. The good will you build up will be particularly beneficial when the Joneses suddenly discover the rear end of your well-bred pup protruding from their overturned garbage can. In fact, this little gag would even add a humorous touch into your family reel.

What talent in your family is worth photographing? Maybe mother lobbies for her hobby of making hook rugs, Son hand-whittles model airplanes, Sis is a collector of toy dogs, while Dad

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as though you had submerged your camera in a water-tight box and filmed the fish in

their native haunts.

likes to fuss around in a backyard fish

Now, any of these hobbies is worth a reel in itself. From the educational standpoint, hook rug manufacture, unfolded step by step with close-ups and long shots, would interest most anyone, and this would give you an opportunity to introduce the wife at work.

Model airplane building has been a craze for many years, heightened perhaps by World War II. But how do youthful experts work with only a pocket knife and scrap lumber? Here, for instance, is an excellent opportunity to close-up individual models in natural color, showing fine points of construction not otherwise discernable. Movie-making indeed has many points in its favor.

Dogs that neither bark nor dig up the neighbor's lawn make refreshing movie subjects, and most canine collectors have specimens of wood, bone, glass and even rags, which would rate a chuckle in cine circles. Hobby filming is an easy way to ask the family to make a bow.

If you're a beginner who hasn't yet dabbled with artificial light and interior filming problems, you can work in the whole family outdoors by concentrating on the flower garden and backyard fish pool. Dad might be engaged in a bit of weeding; mother might be picking a colorful bouquet. Brother and Sis could be feeding the goldfish.

You could swing to close-ups of the feeding fish by removing a couple and placing them in an aquarium in good sunlight, filming the fish through the glass itself. This would give the same impression

When you feel you have exhausted most of the possibilities at hand, try a mystery film under some such title as "Murder Comes to Our House," and work in the members of your family and yourself as detectives, suspects, murderer and murdered. You can adapt most any newspaper or magazine account of a detective story, but avoid the gory details; look at the lighter side.

Maybe one of Sis' life-size dolls has been found sprawled out on its diminutive bed, apparently the victim of a strangler. Sis crys out her discovery and immediately is in tears. Son comes to the rescue, dubs himself the family Sherlock, and warns everyone not to leave the house. Even the family pup cocks his head querulously around a corner and makes a dash for safety.

Now, who killed "Mamie the Dame?" Son rounds up the members of the family, seats them in a circle in the center of the living room, and begins his questioning. He points to M: "Where were you on the night of—, etc., etc."

Mother, much surprised, explains that she was in the kitchen whipping up a chocolate cake for Sonny. Dissolve from the opening explanation right into the cake-baking itself and return to the original scene. He points to Dad, who has an alibi, too. He was out in the garage putting another patch on his patchwork tires.

Now, what about Sis? But, of course, Sis couldn't be the guilty one. After all, Mamie

(Page 90, please)

What is Kodacolor?

Kodacolor is a new color process. It starts with a new film— Kodacolor Film—available in rolls for roll film cameras in popular sizes. After exposure and development, full-color prints on paper are made by Kodak in Rochester.

How is Kodacolor Film used?

Kodacolor Film is loaded, exposed, removed from camera exactly like black-and-white film. No filters, extras required.

In what sizes is Kodacolor Film available?

127 120 620 116 616 122

What are the retail prices?

\$1.25 \$1.50 \$1.50 \$1.75 \$1.75 \$2.40—for six-exposure rolls in the above sizes—including processing, of the film only, by Kodak.

In what cameras can it be used?

In almost any camera loading with one of the above sizes, regardless of lens and shutter equipment. Even a Brownie will make satisfactory Kodacolor pictures in bright summer sunlight—where, of course, colors are brightest and the best color pictures are made.

The film is numbered for six exposures, with supplementary numbering for use in Brownie Reflex and many other splitframe cameras.

What is the basic exposure for Kodacolor Film?

For average subjects in sunlight, the basic exposure is 1/50 at f/8 to f/11. Complete exposure information packed with each roll of Kodacolor Film.

How is Kodacolor Film developed?

After exposure, user removes roll from camera, replaces it in carton, and returns it to his dealers who ships it to Kodak for processing and printing. Cost of processing of the film (but not printing) is included in original cost of the film.

What do the processed Kodacolor Films look like?

Processed Kodacolor Films are color negatives—not color photographs. Like black-and-white photography, Kodacolor is a negative-positive process. Exposed film is developed to a negative—light areas of subject appear dark in negative, and vice versa. In addition, the colors themselves are the reverse of those in the subject.

Kodacolor negatives are intended to be printed only by the Kodacolor process. They then yield color prints corre-



FULL-COLOR snapshots are here . . . thanks to Eastman's remarkable new Kodacolor process.
You take them just like black-and-white snapshots. You use any ordinary roll film camera—even a Brownie or other camera with small-aperture lens, in bright summer sunlight.
Here, in question-and-answer form, is the

Kodacolor story ... perhaps the most interesting story Kodak has ever told... Eastman Kodak Company, Rochester, N. Y.

sponding to colors of subject.

What are Kodacolor Prints?

Kodacolor Prints are full-color positive prints on paper . . . made from the processed Kodacolor Film negatives by Kodak.

In what sizes are these prints available?

All Kodacolor Prints are made

to the same fixed width of 2½ inches... the length is dependent upon the proportions of the picture size of the film. A 620 Kodacolor negative, with picture size of 2½ x 3½ inches, produces prints of the size illustrated on the back cover of this magazine—approximately 2½ x 4½ inches, not including the white margins.

re is a table of print sizes no various negatives—exvive of ½-inch margins. In case the longer dimension is proximate, because of slight mitted with various cameras.

Marie Const		
23/4×4/2	122	278x518
23/x4 16	15/8×15/8	27/8x27/8
128 23/6×4 18	21/4×21/4	27/8×27/8
416 276×5	Half 127	278x3 H
16 2%x5	Half 620	278x4

at is the price of these Kodaor Prints?

Lizes of Kodacolor Prints real at 40 cents each—regardof size of negative or numred prints ordered. Minimum large per order, \$1, except an prints are ordered at time thin processing.

camera is a Brownie Reflex, tolak Duo Six-20, or other defame camera, each of ond negatives will be printed, prately, to 2½ magnifica-retail price 40 cents each.

ware prints ordered?

hen you take the exposed roll Kodacolor Film to your water, you order "one each of tood ones," or "two each," as when you order black-white snapshot prints. our dealer sends the roll to tak for processing and prints. Developed films and prints returned to your dealer's where you call for them.

inpints be ordered from Missier negatives after the hiss been processed and missed to you?

Yes, Kodacolor negatives may beent in at any time—through your dealer. Minimum charge per order, \$1.

ten Kedacolor negatives be ted for color printability?

h Kodacolor negatives the mons themselves are the reme of those in the subject; therefore, it is difficult to judge agaitive's color values or to micipate colors of the positive again. But if negative appears to be a good one—sharp and with good range of density—it should yield a satisfactory Kodacolor Print.

Which negatives in a Kedacolor roll will be printed?

Through their experience with thousands of Kodacolor negatives and prints, Kodak's printer operators know how to judge Kodacolor negatives. They will make the desired number of prints from all negatives that will produce satisfactory results.

They cannot, however, choose specific pictures for you—or make a special number of prints of a certain subject in the roll. Don't order "two prints of the picture of four people"... or "two prints of the one with the best expression." Order "one each" or "two each" of the printable negatives.

Can you order prints yourself, directly from Rochester?

No. Kodacolor Film for developing and printing—and developed negatives sent in for prints—must be handled through a dealer.

Can Kodacolor Prints be mounted in an album?

Yes, the ordinary adhesives and normal heat used in drymounting prints will not damage Kodacolor Prints.

Can Kodacelor be used with Photoflood and Photoflash lamps?

Existing Photoflood lamps and filters will not give good color quality. However, since Kodacolor Film is color-balanced for sunlight, it is possible to use the special blue-tinted No. 21B Photoflash lamp.

Can portrait attachments and fliters be used?

Portrait attachments and other supplementary lenses can be used with Kodacolor just as with black-and-white film. Filters should not be used.

What is the surface or finish of the Kodacolor Print?

Kodacolor Prints have a glossy surface.

Can black-and-white prints be made from Kodacolor negatives?

Yes. Sharp Kodacolor negatives will make quite satisfactory black-and-white prints.

Your Indulgence, Please

THE Eastman Kodak Company realizes that in Kodacolor it is offering something that almost every picture maker wants.

A big program of this kind, introducing not only a sensational new product but an equally sensational new processing system, means that peak production cannot be realized at the start.

As a result, for the present, the distribution of Kodacolor Film must be limited—Kodacolor Film processing must be controlled. For the present, Kodak dealers won't have all the Kodacolor Film they want—or you want.

This situation will gradually change for the better, of course, but it will probably not be materially affected for some time to come; and it is only fair to tell you. Consequently, until these early limitations are removed, "Your indulgence, please." We shall do our best.

EASTMAN KODAK COMPANY

KODACOLOR ROLL FILM

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SHOOTING A PRIZE WINNE

SEVERAL months ago, a young man visited Guatemala. The steps of 400-year-old Santo Tomas church at Chichicastenango being sacred to the Indians, and especially during the yearly Fiesta of Santo Tomas, had a magnetic fascination for him. Picture taking of the steps was forbidden, and shots had to be made in such a way as not to arouse suspicion.

It took careful planning to get the picture that later turned out to be a prizewinner. The covered passage-way was selected because it gave a certain amount of privacy and also provided a definite frame for the picture. The camera used was a Rolleiflex, was held so as to take the picture at a right angle to the photographer instead of directly in front of him. The use of this technique led on-lookers to think that pictures were being taken of something else instead of the church.

Fig. 1 was the first shot. The two natives on each side of the arch were hired to add human interest to the picture. Fig. 2, taken later, proved to have too many silhouettes and too little pictorial interest. When the three Mayan elders seated themselves on the bench the cameraman knew this was the picture. He had only to wait for a dramatic arrangement of the figures on the steps to get Fig. 4.

Putting the darkest mass on the right, the negative was reversed and printed as in Fig. 3. But the original form appeared the best and was enlarged. The picture has been a consistent prize winner wherever it has been shown.

After winning a first in a Queen City Pictorialist competition the print was sent to a regional Photographic Society of America competition in Chicago. Winning first place in this competition entitles it to be shown in the national competition of the Photographic Society of America.



ONE of the first pictures taken of the steps of the Church of Santo Tomas in this series. The native leaning against the wall and walkon the steps made the composition balance a little too perfect. FIG. I



MADE at a later session. Here the emphasis is taken off the rhythmical beauty of the steps by the intrusion of too many silhouettes. But the figure in the center tends to break up the composition too much. FIG. 2



THE PRIZE WINNER reversed. Putting the dark figures on the right side of the composition was not so good. The composition (Fig. 4) on the next page was chosen as best by the photographes.



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figthe od.

SUNLIT STEPS OF SANTO TOMAS. BY BERNARD SILBERSTEIN

A carefully planned picture, and a prize winner in any competition. Made with a Rolleistex at Chichicastenango, Guatemala. Yellow filter, f-11 at 1/60th second on Agfa Superpan Supreme film.

FIG. 4

HOW TO CHOOSE

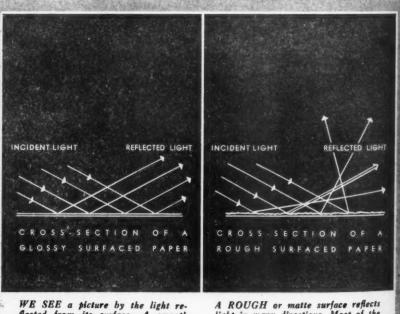
THERE IS A SUITABLE PAPER FOR

By DONALD D. STORING

IVE YOUR negatives a break. Select a printing paper of appropriate surface, texture and tone for each. There is more to printing than merely selecting the correct contrast. That is a separate problem.

Choice of surface depends, first of all, on the subject. We would hardly print a picture of a dainty coiffure on a roughsurfaced paper. Nor would we project a picture of Jesse James' horse on Kashmir Ivory—without projecting our neck as well.

First, there is the ubiquitous glossy paper, the backbone of all the surfaces. It is popular with photofinishers and com-



WE SEE a picture by the light reflected from its surface. A smooth surface reflects light in parallel rays. A glossy surface gives maximum tone range and highlight brightness.

A ROUGH or matte surface reflects light in many directions. Most of the reflection (double line) takes place in the same direction as before, but some of the light scatters.

EPRINTING SURFACES

mercial studios. Where reproductions are to be made, a glossy surface best retains definition, detail and crispness.

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faces.

com-

There are numerous additional sur-Your photographic dealer can show you some. The sparkle of a winter sky, for example, or the glint of sun on water, may best be expressed on a surface such as Royal or Silk.

Not only the subject, but also the brilliance of the picture is to be kept in mind when selecting the appropriate paper, in order to best retain the qualities of the original scene. For example, a negative which contains deep shadows and brilliant highlights may be best presented on a paper which has a surface of high sheen or reflectivity. This will help in bringing out the desired brilliance.

On the other hand, in printing a negative of short tonal range, such as a beach scene or foggy harbor scene, a paper cap-



A SCENE like this with its brilliant highlights and deep shadows, its detail and crispuess, is best printed on a glossy paper such as Agfa Brovira Glossy, Defender Velour Blach S, or Eastman Kodabromide F



THIS TYPE of scene, having less range of tone from light to dark and less detail, can be very well presented on a dull, matte, or semi-matte surface Suggestions: Agfa Brovira Matte White, or Defender Velour Black N.

able of yielding a long scale of density is not necessary. A dull, matted surface, for instance, would possess sufficient tonal range (with lack of sheen) to successfully render subjects such as these.

Then, there is the degree to which we want the effect carried, as judged against the intrinsic vigor of the negative. We might desire only a slight, subtle, softening effect to approximate skin texture in a posed portrait, while in the case of Jesse's horse, a greater degree of roughness would be in order.

Further, there is the question of pattern in paper to weigh against the unbroken masses of the negative. For instance, a surface with a fabric-like texture will do much to lend interest to a broad blank expanse of sky. Some portrait photographers use this general rule: "Large heads on rough paper, small heads on smooth paper." This principle demonstrates recognition of the fact that a rough texture results in the breaking down of detail in the final print. In contrast to this, a negative whose success depends upon its intricate detail may suffer from the softening effect of added pattern in the paper. The negative containing much desirable detail generally requires a smooth-surfaced paper with a fair amount of sheen.

Color of Paper Stock. There are, of course, many tints from which to choose. These may vary from the blue-whites for illustration and reproduction purposes, to the soft whites utilized for portraiture and special effects. Tinted stocks, too, are

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A VIGOROUS portrait subject is best served by printing on a rough, textured surface. Suggestions for printing a subject like this: Agfa Cykora Kashmir, Defender Velour Black QL, or Eastman Vitava T.



A SLIGHTLY TEXTURED paper of high sheen could be selected to retain the life and sparkle of this type of action shot. Suggestions: Agfa Brovira Silk, Defender Velour Black Y, or Eastman Kodzbromide G.

available in many textures. These tints are mostly limited to the ivory tints so effective for fall and harvest scenes. These papers are also particularly well suited for certain types of character studies wherein the buff stock would more truthfully simulate the actual facial coloration.

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The differing tones, or colors, characteristic of various emulsions may be applied toward this aim at realism as well. Since flesh tones are warm tones, we would reproduce them on a paper coated with a warm-toned emulsion, such as Indiatone. Warm-toned emulsions are popularly used for landscapes and portraiture, as well as for interior work. A pronounced sepia tint (popular indeed these days) may be achieved through the use of a sepia toned emulsion, if preferred.

The blue-black emulsions are excellent for reproducing industrial studies and metallic subjects. The impersonal coldness of iron and steel is very well expressed by a cold-toned emulsion, such as Brovira (for projection) or Convira (for contact). If, in a snow and marine scene, you desire more pronounced blues a blue toner will greatly enhance the print's effectiveness. A well treated, well toned seascape leaves the viewer with the impression that he almost heard the gull's cry and beat of water along the shore.

To some extent, however, it is possible to modify the characteristic tones of a given emulsion through variation in processing procedures. Generally, this means that the developer used may influence the tone of the developed print. Using such



HERE ARE two subjects ideal for toning. A sepia (light brown) toner will make the Indian chief speak almost. Suggestions: Agfa Indiatone Kashmir loory, Defender Velour Black EL, or Eastman Opal P.



A BLUE TONER such as Iron Blue is perfect for snow scenes. Suggestions for paper surfaces to be toned: Agfa Brovira Silk or Kashmir White, Defender Velour Black Y, or Eastman Kodabromide N.

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A FEELING of autumn ripeness is well conveyed by the ivory color and warm emulsion of such surfaces as Agfa Indiatone, Kashmir Ivory, or Defender Velour Black EL.

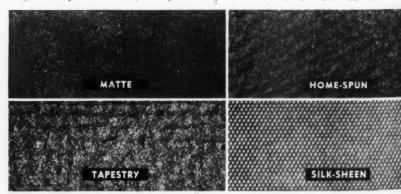


TO PRESERVE the modelling and detail of a fine portrait, use a warm emulsion such as Agfa Commercial Art, Defender Illustro AS, or Eastman Vitava A.

developers as Agfa 103 or 125, or Eastman D-72 will produce colder tones, while development in Agfa 135 or 115, or Eastman D-52 will result in warmer tones. With these generalities in mind, a little thoughtful experimentation and direct print comparison will effectively demonstrate the point.

Keep in mind, also, the available grades of contrast to suit your negative, and the advantages of the various texture screens. If you can practice these rules your misty morning scenes won't tend to glitter in their mounts. Your bewiskered characters will stand in their own vitality, instead of gazing meekly from a velvet surface.

Best print quality and physical performance comes from storing and using photographic printing paper as close as possible to the *ideal* of 70°F. and 40% relative humidity. Re-wrapping the paper in its paraffin impregnated black cover will prevent annoying edge fogging.



TWO of the factors in the selection of a paper surface are texture and reflectivity. It is easy to note the smoothness or roughness of a surface. Reflectivity, or sheen, is shown in the above samples by the amount of

light reflected. A valuable reference booklet is: "Kodak Photographic Papers for Professional Use" (25c at photo dealers), includes photographic paper swatches, and other helpful information. END.

INSIDE Hollywood

CZAR WILL HAYS (and the Army) have just announced a series of restrictions on movie making practices. It gives Hollywood the shakes, Techniques will have to go through a vast revision to teep the movies from becoming static plays on celluloid, dependent upon the dialogue alone. The realism of a motion picture lies in its scope. Now territorial limitations have been imposed. For the duration, no pictures may be made of a street scene, an airplane, a public building, highway, bridge, railroad, train interior, river, open country, seashore, vladuct, or any actual scenery of any nature which might be informative to the enemy. This means that all outdoor scenes will have to be duplicated on the movie set. No more going on location.

Research engineers are hopping about. Executives wave their arms; special effects men, of whom there are too few, look harassed; story editors discard reams of scenarios which seem too difficult to po-tray; chemists design artificial weather; and studio craftsmen build replicas of every imaginable object and scene. At Columbia, an airplane movie which is half finished, is caught amidships by the ultimatum. Despite the fact that airplanes, either in motion or grounded, cannot be used, trick photography offers one method of completion. Motored miniature planes whirl about in clouds within the confines of a small room. Mechanics provide clouds by spraying acids into the room and molding the resultant haze into nebulus, cirrus, or nimbus clouds with huge fans. The perfected, illusion is quite realistic. Hollywood rea-sons that the "erzatz" weather may beneficially replace the real stuff. Backgrounds and mechanical situations will spring from test-tubes and blueprints. The general public probably will never know the difference.

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THE LOSS of Carole Lombard leaves a gap in the names of swell movie people whose shutterbug activities are sincere and show marked talent. We grieve not only because she was a good guy, but because the occasionally offered information to your columnist on movie activities which made good reading.

LUCILLE BALL and hubby Desi Arnaz are feeling sad because of the military order which prohibits arge gatherings. Sport fans both, and genuine cine-photography enthusiasts, most of their 8mm color is taken of horse-races, football games, bockey, polo, and baseball. They have a home theatre in which they exhibit their movies to friends. With the clamps on, and west coast sporting events discontinued for the duration, their showings are becoming twice-told tales to their friends, and they are searching for other exciting scents to photograph . . . Cary Grant shares their feelings.

JACK KOFFMAN of Columbia was given a character study assignment. Unable to find a typical subject, he took a young bit-player to the Makeup Department, outlined the effect he wanted, then

chose the clothing which he thought typical. By using two lights, one on the background, and one high and to the right of the camera. he got the effect which he felt was compatible with old age. Then, with a view camera, at 18, 1/10th second, he took the picture, using only one exposure.



He shoots 16mm color with Bell & Howell, has B & H sound projector, a large home movie theatre, and all the trimmings. A bit more versatile. he has left several ends open, having perfected a lighting system for home movies which he shoots from scripts which he himself concocts . . . Walter Abel uses a 16mm Cine Model K, and gets a kick out of taking candid movies of his friends. They turn the tables on him and take pictures of him taking pictures of them . . . Hanley Stafford, who plays Daddy on the Baby Snooks program, takes beautiful 16mm Kodachrome hill and dale stuff with a Bolex . . . What Jean Hersholt does not photograph with his 16mm Magazine he gets with an Ektra. He is a persistent amateur who always seeks quality, and usually gets it . . . Bob Hope heckles his opponents on the golf course by taking 16mm. movies of them dubbing their shots. His shooting is accompanied by wisecracks which so rattle the other players that they break their clubs trying to get out of traps, and constantly threaten to break somebody's camera. Bob (wise guy) has a duplicate camera, and has just sunk his hooks into a new Ampro projector. At show-ings of Bob's film, the audience, most of whom are former subjects, heckle each other—to say nothing of Hope's (not hopeless) photography.

SCOTTY WELBOURNE, ace Warner Brothers portrait artist, was shooting pictures of Elizabeth Frazier, new honey who is getting a Warner buildup. She registered glamor beautifully, but Scotty needed a color shot showing her face with a look of horror. Despite coaxing, mood music, and drama, she seemed unable to register anything but charm. Scotty crouched over his camera, wheedling and pleading. Suddenly a scream (Page 85, please)

YOUR ENLARGED





ADAPTER for converting an enlarger into a camera. In the wooden frame that takes the place of the regular negative carrier is a standard cut-film holder; the problem is to make this fit accurately enough to be light tight. Below is focusing panel made from ½-in. pressed composition wood.

INSERTING the focusing panel into the frame that, in turn, is positioned in the enlarger. The large hole in center of the panel contains a glass disk (microscope slide cover glass) on which a drop of lacquer with fine lines scratched in it serves as a "focusing target."

N addition to making big prints from little negatives, an enlarger is capable of doing good work as a camera in making copies and photographs of small objects. Some enlargers are designed specifically for taking pictures; this article will be devoted to the kind that started out in life as an enlarger and nothing more.

The chief problems in using an enlarger as a camera, are devising a light-tight method of holding the film and having a method for focusing.

For use in enlargers, such as the Zeiss Magniphot, having a thin slot for receiving the negative, the holder is made of stiff cardboard on thin sheet metal. (See drawings.) The film holder is in two parts that are hinged together by a cloth strip, exactly like a book-type negative carrier. Opening is standard negative size, in the case of a miniature (35 mm.) film, about 1x1½ inches. The holder must be made so it will center itself automatically in enlarger. Rear edge goes as far as possible into slot, and lateral movement is limited by wood strip glued across one end of upper cardboard rectangle.

To make a focusing slide, construct a gadget exactly like the negative holder except for the opening cut in the upper cardboard piece to match the one in the lower piece, as shown by the dotted hatching in the sketch. Place between the

IS A CAMERA

PROVIDE A SUITABLE FILM-HOLDER, AND THE ENLARGER WILL BE FINE FOR COPYING, CLOSEUPS AND MACRO-PHOTOGRAPHS



AFTER focusing, the panel is removed and the film holder inserted in its place.

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HOLDER GUIDE STRIP

PUSH ROD

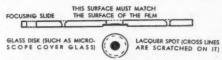
NOTE: USE PUSH ROD WHEN FILM HOLDER DOES NOT PROJECT FAR ENOUGH TO BE GRASPED EASILY

ADAPTER taking regular negative carrier. Should be accurately made of seasoned wood.

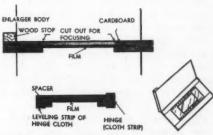
cardboard pieces a piece of old film on which some lines have been scratched, and bind the edges of the sandwich permanently with tape.

To make a photograph of, say, a printed page, with the enlarger, you simply put the page where the enlarging paper usually goes and insert an unexposed film where the negative normally is held.

The usual method recommended is to place in the negative holder your focusing slide, turn on the enlarger lamp and focus the lines sharply on the area to be copied, replace the scratched film with an unexposed one, and with the enlarger lamp off make the exposure while other light sources illuminate the subject. This system will work well enough, but you must be careful to get the unexposed film in the exact position of the focusing film.



SIDE and top view of the focussing slide. Holes around edge indicate outline of film area.



BOOK-TYPE film holder for thin slot enlargers. Above, focusing film holder The accompanying photographs show an easily-made arrangement, particularly suitable for enlargers having fairly wide negative slots or sliding negative holders, which makes focusing and film handling almost automatic. It can be modified to fit the particular enlarger at hand.

First of all, make a wooden frame to replace the enlarger negative holder. Shape the frame so that a cut-film holder, when slipped into it, will bring the film into the same relative position as that occupied by a negative being enlarged. A sliding panel then is made to fit the frame in place of the film holder; it should have openings to assist sharp focusing.

This sliding panel can be in any of several forms. Normally it would consist of a piece of plywood or composition board ½ to ¼ inch thick. The illustrations show a focusing panel that has a number of holes, and this is simple to make.

The central hole is fairly large, say, $\frac{1}{2}$ to $\frac{3}{4}$ inch, and is covered by a piece of glass, one surface of which is in exactly the same plane as the surface of the film when the film holder is in place. On this surface place a drop of black paint or lacquer and let it spread and dry. Then with a sharp needle make several crossed lines through the spot. Bore other holes about $\frac{1}{8}$ inch in diameter to mark the corners and edges of the area corresponding to the area of the sensitized film.

When the enlarger is set up for copying, the sliding panel is inserted into the position normally occupied by the negative holder. Light shining through the smaller holes and projected by the lens on the area being copied outlines the portion that will be included in the picture. In the center will be the image of the large hole; and when the lens is focused sharply the lines scratched through the paint spot will be sharply defined. Now turn off the enlarger lamp, withdraw the focusing panel, and insert the film holder in its place. If the arrangement is not lighttight, darken the room lights, withdraw the slide from the holder, and wrap a piece of black cloth around the enlarger

to keep stray rays from the film. Turn on the spotlights, flood lamps, or other light sources that illuminate the subject to be photographed, and make the exposure. The time of exposure can be controlled either by switching the lamps on and off, or with a shutter on the lens. Finally, with the room again dark, remove the safety cloth, insert the film-holder slide, and withdraw the holder. All these operations normally take but a minute or so.

Thus you see that the basic process of copying with an enlarger is simple: Use a "focusing negative" or special panel in focus the lens sharply on the area being copied; and then replace it with a sensitive film for the exposure. This same system is used when photographing small, three-dimensional objects such as gears, machine parts, still-life subjects, and even portraits. Preferably, the enlarger should be capable of swinging away from the verticle so angle shots can be made. In focusing, hold a small piece of white cardboard, such as a calling card, so the crossed lines can be focused on it in the plane that is to be rendered most sharply.

The enlarger lens, which incidentally should be of the best available quality for both enlarging and picture-taking, can be opened to widest aperture for focusing, and then stopped down to increase depth of field for the exposure. Use the customary methods of determining time and aperture; and remember that, when using a lens close to the subject, the marked apertures are larger than the actual apertures, and exposure time should be increased. Tables and calculators showing exact apertures are available.

One of these is "Effective Lens Aperture Kodaguide," which makes use of the following formula:

Effective f-value Indicated f-value x lens-to-film distance

For example, a 5-inch lens racked out 5 inches from the infinity setting, that is 10 inches from the film, and set at f-8 would have an effective f-value of f-16.

 $\frac{8 \times 10}{5} = f-16$

For solid objects the illumination should be as carefully controlled as in any other (Page 87, please)



SPAWN OF WAR By ELIOT ELISOFON

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REALISM, the quality which permeates Elisofon's work, is apparent even in this maneuver shot in which U. S. parachuters move on the ground with all the grim determination and speed of the real thing. For the story of this young photographer's Alger-like success, see "Elisofon Takes Both Sides of the Tracks," next month in MINICAM.

ZILCH'S BARE FACTS

FAMOUS HYPO BOCTOR REVIEWS THE NUBES

WRITTEN AND ILLUSTRATED BY JEANE SCHERE

Y FRIENDS of the Good Tidings Athletic Association and Sewing Club have asked me to discuss briefly the female form in photography, how it stacks up with the other arts, and when to say no. I am most happy to do this, since there seems to be a lot of it going on, and any girl wants to know where she gets off.

As you know, the female frame has been used in just about all the arts from antiquity on, these including sculpture, painting, mosaic, the dance before Minsky, and others. The Greeks were especially enthusiastic, and if the Golden Age had not been melted down, Mount Olympus would have been quarried to a nub, to provide marble for bosomy dames.

Why Nudes?

In today's photography, nudity has two uses—to wit: 1) It helps the photogra-

pher catch up on his solid geometry, particularly the cone, sphere, and oblate spheroid; as well as geodetics, these being the shortest curves between two joints. C

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2) It gives gals an excuse. Most girls would rather peel in the name of Art, that being cultural, than for mere entertainment, which seems sort of crass and earthy. Art gives a girl just about her only chance to show her shape.

The human frame is really an interesting piece of geometry. Reading from the top down, you have an irregular ovoid supported on a cylinder which is supported in turn by an inverted conic section mounted on a pyramidal base, with various other cylinders, cones or hemispheres appended at strategic points or intersections. Now, I ask you, who wouldn't want a photograph of that?

The schoolbooks all overlook the point, but this very fine assortment of geometry



GEOMETRY is an interesting subject.



THE GREEKS had a word for it.

accounts for the intense Greek interest in the nude, because everybody knows the Greeks were very geometry-minded.

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However, the Greeks were handicapped by lack of imagination, or cameras, as they worked in marble, which is tough chipping. So, most of their nudes turned out to be highly reposeful and physically wellfilled, not to say stylish stouts, weighing in around 200 delivered at Liverpool. This is the type of figure that chisels easiest out of a section of bedrock, a fact that accounts for the distinctive character of classic art.

In the modern photographic nude, we find a great deal more freedom of pose and expression, since a model is much more pliable than a three-ton boulder. For example, there is the popular modern pose known variously as the galloping gazelle, the romping rhomboid, or Annabelle-sat-on-a-wasp. This type of picture, listed as "Rhythm" in the salon catalogs, often shows the young lady in full flight, with all four feet off the ground. Obviously, this is something you can't do very well with a chunk of stone.

Among other favorite modern poses you find the bowline, square or Gordian knot (called "Study," a title which generally reveals a certain amount of bewilderment on the part of the maker). There is the

calisthenic or whirling-dervish type (entitled "Ecstasy"). The brooding-spirit-ofearth, the damsel-waiting-for-a-bus (entitled "Dawn" or "Sunshine"), and the morning-after-the-night-before (entitled "Remorse"). In addition to these important classes of poses, you find various subclasses and sub-cellar classes, and some which do not fall into any of the classes, just falling any old way.

Having paid our respects to the classics, it is time we got down to details and Modern Woman. The only trouble is that, judging by the pictures, there ain't no Modern Woman. I have made a careful survey of all the camera annuals, and, my dears, I find everything from squashy specimens, something like a past-due cantaloupe, to forms that look like a string of rawhide strung on a couple of stray bones. Whatever you want, we've got it.

Picture Types

But to give semblance of order, we can divide the favorite figures into five general classes:

1) The meaty type. This type of figure has lines and masses based on the sugar-cured ham. It is most sought for low-angle shots with a wide-angle lens.

2) The fruity type. This figure has lines based on the familiar shapes of the (Page 86, please)



THE CUMULUS type. Some prefer clouds. CHROMIUM trim is out-for the duration.



• THE CLOSEUP CLINCHES



THE YOUNG THINKER

THE SINGLE PROP—a pencil—and the faraway look tell an eloquent story. The desk is indicated by the arm position. Emphasis by elimination of details.

ID YOU ever stop to think what the movie director would do if he were one morning told, "There will be no more close ups shot on this set." The result would be equivalent to a photographic straight-jacket. The close up puts the movie-goer into an intimate relationship with the lovely lady and all of her friends and would-be friends.

Now of course there has been no decree eliminating the close ups from movies or still photographs, yet amateurs and many professional photographers continue to produce pictures that often fail to get up close enough to satisfy the curiosity of the viewer. Just as close ups in the movies create the feeling of intimacy, in stills they are even more important for there are fewer chances to get the viewer's eye.

The "Young Thinker" (Fig. 1) is a successful picture that tells a story. The appeal of the small boy gets it off to a flying start, but more than that, it summons up a story in our mind. It is easy to assume that we have succeeded in creating a graphic study with our picture, but the acid test is a friend's reaction to it without any explanation on our part. If it draws out a smile or there appears an expression of understanding, we've got it!

Small cameras contribute to overcoverage of subject matter; we want to be sure that we get it all in. Then pride of accomplishment keeps us from eliminating busy details when we enlarge or print; we have made a good negative and we hate to make a picture that uses only ½ of it! Result: Scattered emphasis and the story lost.

Unless a general view of some kind is sought—such as the effect of a sea of faces in a crowd shot—we generally want a close up, in the sense that the subject material and the essential details constitute the picture. A picture that tells a story depends on the close-up to clinch it.

There are, of course, two ways of getting close ups: make the whole negative a close up when you take it, or turn the print into one when enlarging or printing.

Study the close ups that follow. See how the subject is the center of interest and how attention is literally "grabbed" and led into the story. There are never two or more motives of equal interest.

A good close up says what you want it to. Whether it's seen in New York or Tien Sin, your picture's story can't be missed.

THE STORY

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AN interesting example of the difference between a snapshot and a good child's picture is seen in this one by B. G. Silberstein. By getting on the shade side of the child the interesting and third dimensional effect of the shadow is added to the picture.



BY ELIMINATING all unessential details from this picture, the illusion of the children caught in a sudden rainstorm is created, and we can't miss the fun. A slow shutter (1/25 second) increased the rain effect.—By Philip Gendreau.







DESPAIR

DOWN AND OUT. The story of dejection is complete. To a good close-up it often is necessary to add manipulation to further heighten the effect. Without the corner dodging here the eye would slip out of the picture.



APRIL STILL LIFE

THE TITLE was the starting point of this close-up, just the reverse of the usual procedure. Perhaps it would have had even more bunch if a pool of water led off from the umbrella. Try this set-up is your view finder; see how over-coverage subtracts from it.





"CURIOSITY." Data: Ihagee Vest Pochet (127) camera, Eastman Kodak Plus X film, Yellow (K-2) filter, f12, 1/50 second.

A COUPLE OF youngsters on a hill top, low-flying billowy clouds and technically good photography combine to give "Curiosity" all the elements of successful, full-blooded picture-making. This shot has atmosphere and undeniable personality. Note the relaxed, natural poses of the children.

Details, however, could be improved. A little space is needed above the boy's head which is cut off rather abruptly without any apparent reason. The shadow across the boy's face complicates the study; note, by way of contrast, how much more interesting is the girl's face which is not concealed. An alternative composition might be worked out with a section of the space at right trimmed away as indicated by the white line.

As a whole this is a lovely picture, showing a favorite subject in a fresh, unhackneyed way. The use of a yellow K2 filter created a rich gray sky background for the "white" white silhouette of the girl.

 WOMEN ALMOST invariably insist that their portraits show glamour, beauty and poise.
 Only the snap-shooter and news-cameraman ignore this demand with impunity.

In "Portrait" a bright background, perhaps slightly patterned—a flowered drape, screen, etc.—would add a feminine touch and eliminate the fade-out of the hair into the shadow at the base of the head. Pulling the white furred sleeves up close to the neck would place a contrasting texture and value beside the flesh tones and dark hair.

The upward look gives a sober effect that appears a little harsh. Why not let her look forward relaxed and natural? We like to see more of a gracious woman than one eye.

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• AS AN EXPERIMENT in night shooting this picture is certainly interesting. At first glance "Moonlight" looks like another underexposed incident in a photographer's hard life. It is, however, a 15-minute time exposure as the lighted windows in the distance indicate. As we study the print we become aware of an eerie, ghostlike quality, aided by hard light and mysterious deep shadows.

A little less exposure, or a reflection of the moon in the lake would make the moonlight effect more easily recognized. The trimming lines correct the crooked position of the camera. Hold the camera level unless there is reason for a distorted view.



"PORTRAIT." Data: $2\frac{1}{4}x3\frac{1}{4}$ " camera, Eastman Kodak S. S. Pan, flood light in front of camera, spot high light, f5.6, 1/25 second.





Critical HOW TO BETTER THEM

"FISHING PARTY." Data: Kodak 616 camera, Eastman Kodak Verichrome film, f8, 1/50 second exposure.

● BABY PICTURES are always "Fun." The chubby soft faces can stand plenty of sharpness; no need for diffusion. Sunlight, which was used to make the picture "Fun," is an excellent solution to the lighting problems of indoor baby pictures, if made near a window. The light can be regulated with reflectors, screens, curtains, etc.

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In this case a darker background to contrast with the skin tones would be more effective. This shot also shows evidence of considerable overexposure. Use one of the inexpensive popular exposure guides or a meter to determine exact exposure. This is essential if the full charm of the subject is to be captured. This youngster is an ideal subject; an inspiration to any camera, particularly, a proud papa's.

• CERTAIN SUBJECTS are so fascinating that even adverse lighting conditions and technical drawbacks cannot spoil them completely. "Fishing Party" shows the importance of subject matter. It suffers from flat lighting (caused by an overcast sky) yet the impression is delightful because the subject is delightful. The idea is excellent and the approach shows

originality. This picture, if it were technically perfect, would make a swell magazine cover.

An extra portion of sunlight would have brightened the dog's face, made his hair more fluffy and plastic. The background is stale as old beer. It needs sparkles and a few touches of sunlight. The print is also too soft. The next harder contrast of paper will very likely add the necessary snap. Careful trimming as indicated plays up the star of this picture. This is a fine variation on an old theme; try it again with better light.

• A CLEVER, WITTY subject demands a clever witty reproduction. In "Beach Head" the picture doesn't do justice to an unusual and amusing subject. This is no marble head from the ancient world; but merely a well-done piece of sand modelling on a New York beach. The main task was to emphasize the material of the sculpture—sand.

Sand has a specific texture, different from clay or stone, but the picture doesn't make this point clear. A different camera angle, perhaps straight overhead might have revealed more crisp rough sand texture. Early morning or late afternoon light is best for texture shots outdoors.

In spite of this shortcoming, it is an interesting shot off the beaten path. It shows imagination and individuality. The black lines show one way of trimming off unnecessary shadows and foreground details.



"FUN." Data: Detrola KW camera, Eastman Super XX film, f3.5, 1/25 second.

"BEACH HEAD."
Data: Retina II camera,
Agfa Superpan Supreme film, Yellow
(K-2) filter, f8, 1/100
second.



PHOTO DATA

CLIP SHEET FOR PERMANENT REFERENCE

DEVELOPER PROBLEMS

OFTEN when a negative fails to turn out just right the trouble can be traced to too much or not enough of some ingredient in the solutions or of some other processing factor. The following table shows some of the more common faults caused by incorrect amounts of chemicals and other factors.

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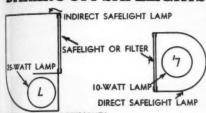
Effect or Fault	Too Much	Too Little
I—Whites clogged and contrast too great	Developing agent (reducer) Metol, hydroquinone, pyro, etc	
2—Flat image lacking brilliancy; development slow		Developing agent (reducer)
3—Same as No. 2, plus shadows with- out detail		Temperature (Normal is 60 to 70 degrees F.)
4—Negative dense but flat, and development rapid	Alkali (accelerator)	
5—Contrast high and development slow		Alkali (accelerator)
6-Development slow and tones cold	Potassium bromide (restrainer)	
7—Rapid development with production of fog in image; tones warm		Potassium bromide (restrainer)
8—Colder tones than normal	Sodium sulphite	
9—Stains: warm tones		Sodium sulphite
10—Rapid oxidation of pyro developer		Potassium metabi-sulphite or sodium bisulphite
II—Fog in negative, with development fast	Temperature (Normal is 60 to 70 degrees F.)	
12—Contrast high and development rapid		Water in developer
13-Detail lacking and highlights thin and weak; development slow	Water in developer	
14-Negative streaked; air-bubble marks		Agitation during development
15—Blisters in emulsion	Heat	Water in developer: rinsing after development and before fixing
16—Frilling of coating at edges of negative	Heat	Hardener in fixing bath or use separate hardening bath
17-Small pits or holes in emulsion	Alum in fixing bath; too rapid drying	
18—Reticulation (leatherlike appearance of emulsion)	Sudden change in tempera- ture during processing	

PHOTO DATA

CLIP SHEET FOR PERMANENT REFERENCE

M I N I C A M PHOTOGRAPHY

DARKROOM SAFELIGHTS



TWO TYPES OF SAFELIGHTS

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Photographic negative and positive materials must be handled either in total darkness or in a light whose color does not affect them, before and during development.

Generally, an undeveloped film or print is affected less by light when it is wet than when it is dy. Also, after development has proceeded for a time, say 30 or 40 per cent of the total required, the negative or print is less likely to be fogged by aposure to actinic light than during the early stages of development. This is a useful situation for it permits fast panchromatic films, which must be handled and partly developed in total darkness, to be examined by the light from a suitable (green) safelight lamp, before being fixed.

Use a 10-watt electric bulb in a direct-type safelight lamp. Use a 25-watt bulb in an indirect safelight lamp.

Common sizes of safelights include $31/4 \times 43/4$ in., 547 in., 8×10 in., 10×12 in. and 21/2 in. circular discs. Never hold a negative or print close to a safelight for more than a few seconds at a time during development.

As usually employed, the term "safelight" refers to the color filter, which may be a piece of colored glass or two pieces of clear glass with colored paper between; and "safelight lamp" to the metal box or other unit with which the safelight is used.

In the summary (right) the correct Wratten safelight has been indicated, but any other type of corresponding color can be used as well.



USE THE CORRECT SAFELIGHT

Here is a summary of the safelights commonly used in the darkroom, and the materials which can be handled safely by them:

SENSITIVE MATERIAL	ILLUMINATION For Handling and Processing
NEGATIVE	
Color-blind film not sen- sitive to green or red light	
Orthochromatic film, sensitive to green light but not red	Red (Wratten Series 2)
Fast panchromatic film	Total darkness during handling and first part of development. Then green safelight (Wrat- ten Series 3)
Process panchromatic	Green
Infra-red films and plates	Total darkness or green (Wratten Series 3)
POSITIVE	
Contact printing paper (chloride)	Yellow (Wratten Series 00)
Enlarging bromide and chloro-bromide paper	Orange or green-yellow (Wratten O or OA)
Lantern-slide plates	Same as for enlarging
Positive motion-picture film	Same as for enlarging

THERMOMETER CONVERSION

To change Centigrade to Fahrenheit:

Add 40 to Centigrade reading. Multiply by 9/5. Subtract 40.

To change Fahrenheit to Centigrade:

Add 40 to Fahrenheit reading. Multiply by 5/9. Subtract 40.

Note that the procedure is the same either way: you always add 40, always multiply by the fraction, and always subtract 40. The only thing to remember is when to use 5/9 and when to use 9/5. This is easy if you keep in mind the fact that the Fahrenheit reading is always BIGGER than the Centigrade, and therefore you must multiply by the bigger fraction (9/5) to get Fahrenheit, by the smaller (5/9) to get Centigrade. (A useful trick is to note that the letter C comes before F in the alphabet, and therefore has a SMALLER position value.)

KAMIBRA KWIZ TEST YOUR PHOTOGRAPHIC KNOWLEDGE

PHOTOGRAPHY is one hobby where there is room enough for everybody who gets a kick out of pointing the little black box with a glass eye at his favorite subject. This Kwiz proves it. There is a helpful tip or two here for everyone from the young box camera owner who wants to take night pictures to the color fan who is just loading his first roll of Kodacolor film.

Good luck, and may the best man win!

What Bulb Is Needed?

- 3 THIS fellow's shooting Kodachrome so the bulb in his reflector for this shot had better he:
- (Check One)

 500-Watt.
- ☐ Prefocused.
- ☐ Blue.
 ☐ Diffused.



the:

01

- A THE varnish-like coating on most of the regular flash bulbs
- Reduces heat.
- ☐ Saves glass.☐ Provides a filter.
- Keeps glass from flying.
- ☐ Concentrates light. ☐ Polarizes the light.



1 EXPOSURE for this night shot is 1 second at f8. Can this pix be made with a box camera having only 1/25 second setting and neither Time nor Bulb?



- 5 HERE'S a bag of crystal hypo hanging in a beaker of plain water. It's
 - Purifying the water.Cleaning the beaker.
- Precipitating silver.

 Dissolving to make a plain hypo solution.





☐ No. ☐ Yes.

□ 1. □ 2. □ 3.



□ 1. □ 2. □ 3.



□ 2.

2 PICK out the camera angle for each of these three shots. Study the diagrams at right and match them to the pictures. Then check the correct diagram number under each pix.



High Angle



1.

Eye-Level



□ 3

Low Angle

What Makes Wavy Scratches?

WHEN a roll of nega-Otives has wavy scratches, there's grit in

Camera. Sponge.

7 Tank.

Cartridge.

☐ Enlarger. Developer.





WHEN the background is sharp and the main subject is fuzzy the error lies in:

Camera setting.

Negative processing.

Enlarging.

Choice of film used.





IS it possible to obtain these two effects in contact prints from a single unretouched aeggtive?

Yes. No.



3



THE addition of dark frames or silhouettes to pictures as in "B" is best accomplished by double printing.

☐ True. ☐ False.

KAMERA KWIZ

CONDUCTED BY VICTOR H. WASSON



10 THE numbered colors are from the posi-tive on this month's cover. Their complementary (negative) colors are listed in a different order in the column at right. Study the color negative and positive on the cover and then place the correct number in the box beside each complementary color.

(Positive)

(Negative) Yellow

l. Red lips.

2. Blue background.

3. Pink stripe.

Violet.

4. Yellow stripe.

Light blue.

5. White teeth.

Olive green.

ANSWERS

Don't Peek! Check questions before looking at answers below.

- 1. Yes. Operating the shutter about 25 or 30 times, with the camera on a firm support would produce nearly the same result.
- 2. "A" matches diagram No. 3, "B" matches No. I. "C" matches No. 2.
- 3. Blue. The blue bulb is needed because he is using both daylight and artificial light on the subject.
- 4. Keeps glass from flying. This transparent safety jacket is an added protection in case the flash lamp bulb cracks when fired. In the case of blue flash bulbs for Kodachrome the coating may also serve as a filter.
- 5. Dissolving to make a plain hypo solution. The hypo disperses through the cloth into the water. Using this method of dissolving hypo eliminates the need for repeated stirring while the crystals dissolve.
- 6. Sponge. Foreign matter or hard particles in the sponge dig into the emulsion as the surface moisture is being removed.
- 7. Camera setting.
- 8. Yes. Contact prints may be vignetted by using masks between the light source and the negative to protect certain parts of the paper.
- 9. True. If the scene and silhouette are printed in a single exposure, one image is likely to show through the other.
- 10. Red lips-light blue; Blue background-yellow; Pink stripe-olive green; Yellow stripe-violet; White teeth-black.

Score: 5 correct is fair; 6 correct is good; and 7 or more correct is excellent.

PHOTOGRAPHY "ain't what she used to was." In proof, consider the following historical facts:

ONE OF the first miniature cameras was made by Niepce in 1816 even before the introduction of a practical light-sensitive material. Using a lens taken from a microscope and a tiny jewel box, he produced a camera which measured only $1x1\frac{1}{2}$ inches in size.



EARLY photographers sometmes introduced diffusion into their negatives by attaching a violin string from their camera to the floor and during the exposure would saw vigorously back and forth upon this improvised "musical instru-ment" with a violin bow!

THE FIRST extractions of gelatin are reserved for photographic manufacturers; the second are for gelatin food products, and the third used to make glue. Thus film gelatin is better than that we eat!

IN 1853, a prominent New York clothier offered a free daguerreotype with the purchase of every hat. This was to be placed in the hat lining like the initials are put in hats today

X-RAY photography has been used to detect the following:

- 1. Forgeries
- Swallowed metal objects
 Flaws in steel girders
- 4. Unauthentic mummies and skeletons
- 5. Artificially produced worm holes in antiques



THE FIRST photographic publication was the Daguerrian Journal edited by S. D. Humphrey of New York. The first issue appeared November 1, 1850 and continued under various names until 1870.

IN THE FIRST published exposure guide, the time of exposure was thought to be governed partially by the temperature and the direction of the wind.

IDENTIFICATION photography had its beginning in 1856 when an advertisement appeared in a newspaper giving the picture of a matrimonially-inclined



THE FIRST judicial use of a photograph occurred in November, 1839, when a daguerreo-type served as an "exhibit A" witness in a divorce case.



daguerreotypes.

AN EARLY book by James Ryder states: "It was no uncommon thing to find watch repairers, dentists and other styles of business folk to carry on daguerreotypy 'on the side'! I have known blacksmiths and cobblers H

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to double up with it, so it was possible to have a horse shod, your boots tapped, a tooth pulled, or a likeness taken by the same man-

A CASE of smallpox was recorded photographically as early as 1864 before the eye could perceive it. Today sub-dermal photographs are taken with infra-red emulsions.

INFRA-RED films are often used to record the size and shape of the iris of the eye which is fully expanded in the absence of all light.

SAMUEL F. B. MORSE, besides inventing the telegraph and being a famous portrait painter, was one of America's early experts in photography. He is sometimes referred to as the "Father of American Photography".

IN 1851 it was suggested that the inside of a camera be painted white, intending to decrease the exposure time by introducing an additional illumination. It was not until many years later that it was found necessary to avoid flare by doing away with this method.

NEARLY 75,000 dozen eggs were used per year in the 1800s in the making of albumen photographic

AERIAL photographs taken from a great height can detect objects as small as a fence post or a floating mine.





Most photographers who pick up cameras for a song give several notes for them.

Having lots of eyes on her doesn't make a model big potatoes!

Still Life

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later re by Several vases In the right places.

No Lady, midget bulbs are not used just for photographing dwarfs.

Frankly, we like fine physical development for models better than for film.

lt Didn't Distinguish Her

An ambitious young lady named Irene,
Made a shot of a gorgeous sky scene,
But the miss was confused
In the soup that she used,
And found that the film speed was zero
—in Pyrene.

The Tyro Practices With An Etching Knife
Eradicating
By excavating.

Smart Reply

Print tong user: "I never touch the stuff."

Blue Toned Prints

Something blue has been added!

Across the Counter: After waiting a week for some strip prints, "What is this, a strip tease?"

No Lady, Solarization is not controlled by Burke and James!

The way some models pose on a sofa is just too, too divan.

Might we suggest fur mittens for guys who like to take apart shutters?

Entitled "No Title"

It's beginning to look from a perusal of the salon catalogs that the most common of all

titles is "No Title." After all, there's a limit to the number of times one can use "Sentinel," "Innocence," "Still Life," or "Serenity"—or there should be!

Across the Counter: "Give me some 7 x 5 paper." "Sorry, all ours is vertical."

For Dense Negatives

The cure for some is Reduction with pumice.

Camshop Advertisement:

We Make Life Size Enlargements (No Grand Canyon snaps, please!)

The Magnetic Personality

Then there's the human dynamo type of photographer—everything he uses is charged.

When a model looks good in a bathing suit the photographer usually looks good, too.

You Say the Nicest Things Dept.: "Why your pictures are nice enough to frame!"

This Month's Definition: Restrainer—Second hand filter paper.

Historical Note

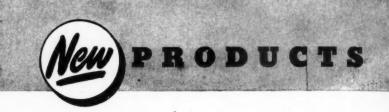
The "60 second workout" of the 1840's was posing for a Daguerreotype portrait.

Minicamists like their negatives sharp and their swapping sharper.

Film Manufacturer's War Slogan: "There's no spool like an old spool!

Infamous Last Line: Upon seeing a photographer the day after he shot some Kodachrome, "How did you color prints turn out?"





Photography Industry in Defense

THE "all out for Victory" effort has gained further cooperation from the photographic industry with International Industries' (Argus) announcement of a new \$260,000 one-story plant to be devoted exclusively to government defense work, Wabash's development of a silverlined backout bulb, and Medo's offer to buy some used cameras with Defense Bonds instead of cash.

Originally scheduled to bui'd a \$73,000 addition for this work, International's expansion will cost \$110,000 plus \$250,000 for machinery and equipment. Robert D. Howse, president, estimated 300 men would be employed in this new division, which will increase the company's defense volume from 50 to 80 per cent of its total

volume.

Wabash's blackout bulb provides downlighting in a soft beam of blue light that is safe for indoor visibility during blackouts. The bulb is lined inside with a pure silver reflector lining that hides all filament glare. Light leaks are prevented by black silicate coating that covers the bulb up to the extreme lighting end which is a deep blue. The bulb consumes 25 watts and lists at 45c.

If you have a camera you wish to sell for \$37.50, Medo will give you a \$37.50 Defense Bond for it, if agrreeable with you. This bond matures to \$50.00 in ten

years.

Camouflage Taught in School

The School of Design in Chicago has added two courses, one in Camouflage under the direction of George Kepes. Light and Photography Workshops, and the other in Visual Propaganda in War Times, under the direction of Robert J. Wolff, in collaboration with the National Defense Program. These courses are scheduled for Evening Sessions and as a supplement to regular work in the Day School. The Camouflage course includes

research in nature and animal camouflage, surface covering, mimicri, visua musions, geometrical optics, a basic lantography course, and cam uflaging with moke, gas, mercury vapors, neon lights, and light to lets.

Lectures on Physiology of the eye, atmosphere, landscape problems, and optics will be conducted by such outstanding lecturers as Jack C. Copeland, Otto K. Jelinck, and Richard A. Perritt, M. D. are featured in the Visual Propaganda in War Time course.

A catalog giving complete information will be sent on request. Just write School of Design, 247-257 East Ontario Street,

Chicago, Ill..

Castle's British Commandos

"Britain's Commandos in Action" is being proclaimed the best action movie of World War II. In grim scenes it shows how Britain's toughest fighters win a sevenhour victory over Nazis on two Norwegian islands.



Wounded Commando being assisted back to raiding boat

Hand-to-hand fighting in the streets, explosions of docks, warehouses and other military objectives are included in this exciting Castle film. It is available now in 8mm. and 16mm. sizes and in varying lengths to take care of all movie enthusiasts.

(Turn to Page 80, please)



Wanted Graflex-made Cameras Bearing These Serial Numbers

Graflex and Speed Graphic owners—look at the serial numbers of your cameras! If you have one bearing a number shown above, we'd like to borrow that camera for approximately 30 days for engineering and research purposes. In return, we'll put it through our Customized reNEWal Department and it will be returned to you, postpaid, in new operating condition. Here's your chance to be of real service to us and, for your trouble to receive a genuine Graflex Customized Camera reNEWal absolutely

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You'll find the serial number of your camera, in digits 1/4" high, in one of these places: Speed Graphic — under-side of top at right front; Graflex — front under-side of top door (older models — on the bed, or inside front or top of body); National Graflex — smaller digits inside bottom of outer case; Crown View — on top of traveling member to which rear of camera is pivoted, directly below ground glass.

The Graflex Customized reNEWal Plan assures the Graflex and Speed Graphic owner of a full lifetime of service. It puts at his disposal the technical facilities and craftsmanship to keep his camera operating and looking like new as long as he owns it, at moderate cost.

If you think your camera needs service of any kind, take it to your Graflex Dealer and ask him to send it to us for inspection. Under the Graflex Customized reNEWal Plan it will be careflely examined, and our recommendations together with an estimate of the cost will be forwarded to your Dealer. If you approve, the work will be done and you will receive your camera bearing our stamp of approval—the Graflex Gold Seal.

Have your Graflex or Speed Graphic re-NEWed today. To facilitate service, Graflex Customized reNEWal Departments are located in New York City, Rochester, N. Y. and Los Angeles.

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MARCH VALUES

Zeiss Super Ikonta B, Tessar F2.8, like new	\$125.00
Leica G. Summar F2, like new	145.00
200mm. Telyt F4.5 telephoto for Leica with	
Reflex Housing	224.00
Contax II, Sonnar F2 lens, ev. case, like new	149.50
Weltini, Schneider Xenon F2 lens, ev. case, like new	84.50
21/4x31/4 Speed Graphic, Ektar F4.5, Kalart	
Rngfdr., equal new	110.00
16mm. Eastman Magazine Movie Camera, Fl.9, I.n.	74.50
16mm. Victor 4, BRAND NEW with 1" F1.5 lens, I.n.	107.50
16mm. Bolex, with I" Eastman F1.9, like new	197.50
8mm. Cine Kodak Model 20, F3.5, like new	22.50
8mm. Revere Movie Camera, F3.5, equal to new	27,50
De Jur Versatile II enlarger, to 21/4×21/4, no lens, I.n.	42.50
Simmon Super Omega B, enlarger, to 21/4×21/4, no lens, like new	59.50
no lens, like new	57.50

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All used equipment sold subject to ten day trial. Hundreds of other bargains available . . . high trade allowance for your present equipment.

New York City

U. S. Housing Film

"Yes, We Can Have Housing" is the title of a slide film prepared by the U.S. Housing Authority to show the nation's housing program, the U. S. H. A. public housing program, and to make suggestions to local groups regarding how to work effectively for better housing in their own communities.

You can obtain a copy of the slide film plus speech notes for 75c by writing Photo Lab., Inc., 3825 Georgia Ave., N. W., Washington, D. C.

For a copy of "How to Make Your Own Illustrated Lecture on Housing", which tells how to combine parts of the U. S. H. A. film with local pictures and local date, write directly to the Information Division, United States Housing Authority, Washington, D. C.

Cash for Your Prints

Photographs are wanted by Ed. Wolff & Associates, advertising agency for Wollensak Optical Co., for advertising purposes. Subject of photograph may be whatever the artist prefers but should exhibit qualities reflecting favorably on the lens used.

Prints should be suitable for full-page magazine reproduction, and should have been made and/or enlarged through a Wollensak lens. Prints are preferred at 10 x 8 inches.

Price for accepted prints will be settled by letter, and unpurchased prints will be returned. Send prints to Ed. Wolff Associates, 428 Taylor Bldg., Rochester, N. Y.

Streamlined Contact Printer

Eastman's new Kodak All-Metal Printer Model 2 takes negatives from 35mm. up to 4x51/2 inches, is hardly larger than a small packing box (actual dimensions are 10x-8x6 inches), and lists for \$19.75.



This new printer is designed for contact work on Azo, Velox, and other contact printing papers. It has four easily adjustable, inch-wide, margin masks, A supplementary feature are the ruby Koladloid scales which are illuminated from below by the printer's ruby safelight.

Important for additional printing control is a slot on the left side of the printer. Diffusing materials such as ground or opal glass can be introduced through this slot to reduce the intensity of the printing light. This is necessary when an extremely rapid printing paper, such as Vitava Opal, is used, or when making duplicate negatives on Kodak Autopositive Film

Photrix Print Washer Model 810M

The Photrix Print Washer for 8 x 10 prints and cut films, previously made of bakelite, is now available in zinc-coated steel, gray enamel finish, according to a recent announcement by Intercontinental Marketing Corp. The new model 810M lists for \$3.95

Commonwealth Rents Films

A 16mm. S. O. F. Rental Library has been organized by Commonwealth Pictures, who up until now only sold movies. Hedy Lamarr and Charles Boyer in "Algiers", Laurel and Hardy in "Flying Deuces", and Walter Wanger's "Blockade", featuring Madeleine Carroll and Henry Fonda are some of the films now on a rental basis.

(Next page, please)

UNSURPASSED "THEATRE QUALITY" PROJECTION IN EVERY TYPE AND STYLE OF SCREEN OFFERS THE FINEST IN QUALITY REPRODUCTION FOR EVERY KIND OF Screening!

RAVEN FABRICS

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RAVEN MOUNTINGS

DeLuxe Automatic Collapsible 22" x 30" to 70" x 70" Standard Tripod 30" x 40" to 52" x 72" Gear Operated Tripod 45" x 60" x 70" x 96" Duplex 30" x 30" to 70" x 96" Table 18" x 24" to 36" x 48" Metal Case Hanging 22" x 30" to 12' x 12'

Spring Roller and Back Board 70" x 70" to 12' x 12' Wood Roller and Batten 48" x 48" to 12' x 12' Thruvision 18" x 24" to 45" x 60"

444 distinctive Raven Screens - Haftone, Witelite and other exclusive fabrics as well as many standard fabrics, such as Glass Beaded - are yours to choose from. No matter how varied your needs, you'll find a Raven Screen serves you best. In times like these your purchase of equipment must be more discriminating than ever before. Some of the nation's foremost cinematographers as well as many theater chains use nothing but Raven Screens. You, too, will find them the finest values for your money. Leading dealers everywhere feature these outstanding screens. See

them today or write for illustrated brochure.

Eastman Kodak selected Raven Screens, from among all others, for their gorgeous Cavalcade of Color at the World's Fair.



Educational, comic, technicolor and black-and-white cartoons are now available and are now included in the catalog which may be obtained by writing Commonwealth Pictures, 729 Seventh Ave., New York, N. Y.

Leica Carrying Case

The new Leica Carrying Case accomodates the Sliding Focusing Copying Attachment, six Extension Tubes, a Focusing Shade, a 50x Magnifier, and a Leica cam-

era with a 50mm. or 90mm, lens attached. The case provides separate compartments for each of these accessories and sufficient extra space for a lens shade and several magazines of film. Thus, with the exception of a tripod, all



equipment necessary to make close-up photographs can be carried in this compact case.

List price and other details can be se-

cured direct from E. Leitz, Inc., 730 Fifth Ave., New York, N. Y.

Kalart Contest Nears End

You have one more month to cash in on some of the \$750 in photographic merchandise awards being given away in Kalart's contest. It ends March 31. The only requirement is that your entry be taken with a Kalart Speed Flash. Hurry to get your entry blanks at any photographic store or direct from Kalart Co., Stamford, Conn.

The first month winner (an award is being given for the best picture submitted every month during the contest) is Edward K. Everard, New York, N. Y.

Fototint Trial Offer

Six trial-size capsules of FotoTint, manufactured by the Mansfield Photo Research Laboratories, are being offered at a reduced cost of 25c so darkroom fans can acquaint themselves with FotoTints for tinting movie scenes, black-and-white titles for splicing into color reels, and 35mm. slides.

These six (sapphire blue, amber brown, emerald green, royal purple, fire red, and

(Next page, please)



The Pick of Our Used Cameras

35mm, Robot I. P3.5 Primotar	5 59.50
35mm. Perfex 55, F2.8 Wollensak	49.50
35mm, Leica Standard, F2 Summar	105.00
35mm. Univex Mercury. F3.5 Tricor	14.95
33mm, Univex Mercury, F3.3 Tricor	150.00
35mm, Kine Exakta, F2.8 Xenon	
3x4 cm, Makinette, E. C., F2.7, Anticomar	49.50
3x4 cm. Baby Ikomat. F3.5 Novar	27.50
3x4 cm Kodak Vollenda, F3.5 Radionar	27.50
15/ax11/4. Balda, F2.9 Trioplan	29.30
15/gv11/4. Altissa, F4.5 Victar	19.50
15/4x11/4. Precisa w. case. F4.5 Victar	21.80
21/4x31/4. Voigtlander Bessa, F4.5 Skopar	24.80
21/4x41/4 Super Kodak w. R.F. exp. Meter, F3.5 K.A.	145.00
31/4x51/9. Nixe. F6.8 Hekia	27.50
314x41/4 Graffex D. Rev. B., F3.5 Schneider Xenar	
4x5, R.B. Series B. Graffex, 71/2" F4.5 K.A	69.50
21/4×21/4 Primarflex, 4" C.Z. F3.5	115.00
31/4x41/4. R.B. Tele Grafiex, 61/2" F4.5 Schneider.	72.50
State A. R. D. Tele Grands, 645 Fa.5 Schiller et .	
21/ax31/4 Kawee Pack Camera S. E., F4.5 Dialyta:	
0x12 cm. Voigtlander Avus D.E., F4.5 Skopa	2 .50
9x12 cm, Zelss Trona D.E., F4.5 Dominar	42.50
9x12 cm. Kodak Recomar w. R.F. D.E.	
F4.5 Meyer Gorlitz	69.50
9x12 cm. Welta D.E., F4.5 Eurynar	22.50

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flash units, plates,
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An important improvement to furthering better vision in exacting work as is done in the darkroom or in machine tool shops, is the new Magni-Focuser Eve-Shade listing at \$8.50.



The shade straps on the head (see photograph) thereby enabling the wearer to use both hands in his work instead of using one to hold the old style magnifying glass. Equipped with a pair of stereoscopic fine power magnifying lenses, the subject is brought into focus by a slight tilt of the head.

The shade is manufactured from plastic by Elroy Products, 480 Lexington Avenue, New York, N. Y.

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Raygram's New Home Movies

"The Race for Life", available in 8mm., 180 feet, and listing at \$5.50, is the first in a series of home movies, known as Flicker Frolics, to be released by Ray-gram Corp., 425 Fourth Ave., New York, N. Y. Mabel Normand, Ford Sterling, Mack Sennett, the Keystone Cops, and Barney Oldfield, are starred in this oldtime slapstick melodrama.

32-oz. Size Finex

Amateurs and professionals who require an ultra-fine-grain film developer in quanttities for large developing tanks now will be able to purchase Afga's Finex in quart bottles for \$1.75.

The 32-oz, bottle permits a total of 60 rolls of 36-exposure 35mm. film, or 60 rolls of B2-size rolls or their equivalents,

(Next page, please)



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to be developed. A chart on the bottle may be used to keep an accurate check on the number of square inches of film that has been processed. A 25-page instruction booklet and a handy 2-oz. glass graduate for measuring replenishers are included with the bottle.

Quick-Set Enlarging Easel

The Quick-Set Easel, by L. R. Biber Co., and priced at \$9.75, is designed to give complete control of the paper, holding it flat to do away with any wrinkles. Heavy steel construction is throughout.

The measurements are a happy combination of engineering possibilities and the photographer's needs. A paper size of up to 14" x 17" is accommodated with a printing area of up to 11" x 14". Marfins are adjustable from 14" to 11/2".

New Flash King Synchronizer

A new Flash King Synchronizer for use at all speeds on handset shutter type cameras utilizing SM G. E. flash lamps, and selling for \$1.00, is now being distributed by George Murphy, Inc., 57 East Ninth Street, New York, N. Y.

The new Flash King synchronizes miniature local plane shutters using No. 6 G. E. flash lamps at speeds ranging from 1/100th second to top speeds. In addition it synchronizes at

all speeds on cameras employing self-acting ready-set shutters used with No. 5 G. E. lamps, and at speeds from one second to 1/50th second on cameras with hand-set shutters.

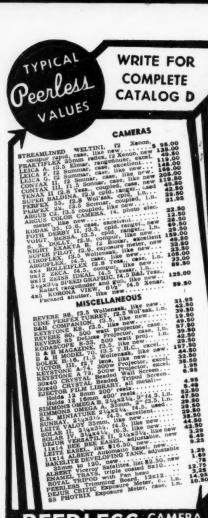
Each model SM Flash King is tested and guaranteed to synchronize any between-the-lens cocking type of shutter that the Flash King and the cable release will trip. Used with correct lamp, it is guaranteed to synchronize at all speeds to the top speed of the camera.

Cases For All Purposes

If it's a camera case you're looking for, be sure to see the new line of Frank A. Emmet Co. Eveready and slip type cases for most



popular cameras, and gadget bags, popularly priced from \$4.95 to \$20.00, are featured. Look for these products at your dealer's, in an attractive sky-blue box imprinted in red.



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- NEWS AND IDEAS --

• WELCOME NEWS is the P. S. A. schedule of recommended practices for salons, including type of entry blank, size of mounted print, and judging these prints. Salons conforming to these practices will be allowed to state so on their entry blanks as follows: "This salon will be run according to the recommended practices of the Photographic Society of America."

List of important recommended practices is:

- Entry blanks should be mailed not less than two months before the closing date of the salon.
- 2. Entry blank should list the judges.
- Mount size for mounted prints should be limited to 16" x 20".
- Prints should be permitted to be mounted on either horizontal or vertical mounts so as not to restrict the showing of the print to its best advantage.
- 5. Lapse of time from the closing date of the entry date until salon is open to public should never exceed one month.
- Exhibitor should be notified as to his success or otherwise within one week after the judging.
- When none of the exhibitor's prints are accepted, they should be returned as soon as possible, and in no case kept longer than three weeks after judging.
- All prints should be returned to exhibitor prepaid.

Book Reviews

Recommended Reference

BASIC PHOTOGRAPHY, TM 1-219. Prepared under direction of the Chief of the Air Corps. 340 Pages, illustrated, 51/x29 inches. Published by War Department, July 1, 1941. Price, 35 cents.

This is a revision of the U. S. Army Air Corps Training Manual. It covers elementary photography, chemistry, sensitized materials, optics, filters, sensitiometry, ground camera photography, negative making, printing, copying slides, color photography, and laboratory operations.

5 b c

The appendix includes a list of chemicals, tables used in photography, a glossary of terms, and a formulary of army developers and other solutions.

This reference manual should be in every library for its practical and useful information. It may be ordered from the Superintendent of Documents, Government Printing Office, Washington, D. C., by sending cash or government coupons. Postage stamps are not acceptable.



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shriled, and Elizabeth, eyes bulging and face distorted, with terror leaped to her feet and ran out of the studio. Dangling in front of the sofa on which she had been lying was a gigantic black spider at the end of a thread. While Scotty had been wheedling, assistant W. Lloyd McLean had climbed silently onto the catwalk above the camera and had dropped the imitation spider. Scotty, of course, shot the picture at the crucial moment. The timing was so perfect that we were confused by the sudden occurrence, and had to find out more about it. It seems that Scotty uses this stunt as a standard technique when other resorts for expression fail—the old meaniel

TWO SOLDIER reporters from a nearby army camp accompanied us to the lot of Universal Pictures for an interview, and in the company of head photographer Ray Jones, visited the sets on which Olson & Johnson, and Abbott & Cos-

tello were working on separate comedies. On the O. & J. set, we saw a crowd of technicians, actors, assistants to assistants, and extras, most of whom were lavishly dressed, and most of whom were playing gin rummy, chewing the fat, rehearsing their lines, reading their scripts, or taking a nap between "takes." For the twentieth time, Olson, with funny hat perched atop his head, wrapped himself in a stage curtain, let out a hilarious laugh, then said, "Do you think I'm funny? Well, wait 'til you see yourselves!" A voice barked, "Cut", a dozen men shouted, "Quiet!" and at that moment, onto the set marched pompous, comic, tubby Lou Costello, who was promptly chased back onto his own set. We learned that he visits other sets, puts the cast into paroxysms of hysterical laughter and upsets their routines, then quickly exits, We chased after him and asked him about his Iomm sound equipment, his two sound projectors, his home theatre, his large darkroom, all of which we know to be his pride and joy. To our incredulous surprise he gagged, "If it's for print, it's a lie!"



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Zilch's Bare Facts

(Continued from page 65)

pear, lemon, grapefruit, pumpkin, and gourd. It is popular for all-around use. until it over-ripens, when it begins to look more and more like a sack walking (not to be confused with the popular song).

3) The cumulus type. Reminiscent of the magnificent, billowy clouds found in many summer landscapes, and popular among photographers who like to fill the frame of their pictures. Some prefer the clouds.

4) The metallic or oil-immersion type. Characterized by lean lines and a teakwood chassis with bright brass trim (like tropical camera equipment, which, I guess, it is supposed to be, in a manner of speaking). The effectiveness of this type of nude depends on the quality of the grease job, a la Chesebrough.

5) The rectilinear type. This is another lean type of geometry, but somewhat softer; generally described as the boyish type, to distinguish it from the boy-oh-boy-ish type, which you have all observed walking down the street hanging on the arm of some big handsome lug. dammit. The approved salon title for a picture of this type is "Diana".

Technicalities Are Out

Now, I doubt if many of us girls are interested in the technical aspects of nude photography; but it is well to know something about this, as one of these days we may have to decide whether to take it on the lens or take it on the lam, and a



little technical knowledge will help choose.

Drapes are important. These include the white sheet (also known as a Pepperell toga), the tennis net, the marquisette curtain, the string of pearls, the strand of dental floss-and, of course, a nice sheer

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Then there is lighting. This can be high key (lots of light), low key (very dim, and watch your step), edge light, plain or mixed with low key; starrr-shell lighting (which consists of blowing your highlights off with one big sun-spot), and tiger-lighting or zebra-lighting (you decide which when you see the print). This last type of lighting is obtained by sticking a venetian blind before the main light, this giving the effect of a convict suit, or a stick of peppermint candy.

And now, we come to the question of The favorite locations are a strip of open beach (make the guy post some lookouts), a pile of rocks (double pay here), underwater, and in a studio full of cardboard screens and pylons.

Most amateurs are serious, high-minded chaps, but should one use a camera only as a decoy, there's only one thing to do: Mention that chiseling is only for sculp-

Finally, in way of warning, save your harmonic curves for them as will stick to their geometry and their ground-glass. And remember that a guy using an exposure meter is measuring the amount, not of nudity, but of brilliance. I thank you.

Enlarger Is a Camera

(Continued from page 62)

kind of photography. A floodlight unit and a small spotlight can be used to produce excellent lighting. The spot often is employed for backlighting while the flood illuminates the shadows. The one thing to remember when illuminating copy material is to keep the illumination even. A single spotlight or two spots can be manipulated to do this, or you can arrange two or four 60-watt lamps around

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the easel to throw even illumination over the copy subject.

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"Give Deanna a Personality" (Continued from page 36)

handle, or inexpensive ones that require much sweat and work. Our lights are conveniences. They save time. That is the only reason we have gone to such pains to get every type. It is not the kind or size of light you use that determines your picture—it is the adeptness you develop in using that which you have at hand.

Two main lights are all a photographer needs. It doesn't matter whether they are flash or flood, so long as they are properly controlled. A tin-can can concentrate a beam of light. A spot with a special lens can be more easily controlled, although a similar effect can be had with home-made equipment in lesser numbers than this vast array we have here—. And with a sweep of his hand Jones indicates his disdain, though it is respectful disdain, for the fortune in Senior Spots, Junior Spots, Rotary Arcs, Twin diffused Floods, Baby Junior Spots, and individual floods of every kind and size.

"I sometimes use as many as eight lights on a subject," continues Jones, "but I never forget that the two main lights determine the picture." These two main lights can be moved about in a versatile manner to bring out changes in expression or accentuation of key features. Any other lights are simply supplementary. One or more is generally used on the background, unless a black background is desired. One usually brightens the hair,

or as in the early pictures of Deanna, puts the sparkle in her eyes. One evens up a shadow here, or heightens a highlight there.

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As we watch the man at work we are amazed at his dexterity. With a flick of his fingers he creates lighting magic. He deprecates the value of his equipment even as we note its convenience to him.

"Bet you," says Jones, "that I can duplicate this picture with the homemade reflectors and flood bulbs that I once used to photograph stiffs. I bet you a week's pay that any good photographer can get results in much less spacious quarters with much less pretentious equipment." His sincerity and assurance are intense. We agree simply to watch him work and to note his tricks.

"Close one eye," he says, "and you can see what the lens sees." Both eyes give a deceptive impression of roundness that is not seen by the camera. I never use fast film for portraits. Better definition can be had with slower exposures on slow film. Sharp edges? Soften them with a diffusion disc on the camera, or diffusers on the lights, or both, but first develop a camera eye so that you can determine before you waste film what you are going to get. His comparison in photography in cadavers and breathing humans are somewhat startling in that there are definite benefits indicated in devoting time to experimental lighting of inanimate objects. Expressions and accentuation of notable or favorable characteristics can be developed by the shifting of light from one source to another, be the shift ever so slight.

Jones Works Fast

It is obvious, as he systematically arranges props before varied backgrounds, that every step is carefully planned. His

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assistants respond to a wave of the hand or a terse word, and lo! the scene is there. A minor change or two and Jones rolls up an old Century View camera, peers through the ground-glass, stands erect. closes one eye and squints, asks for a change in light positioning, shoves in a holder, pulls the slide and the picture is taken. Then, perceiving a neckline that is conducive to a glamor shot, he swings about, shooting from varied angles and distances.

S

All the while he chatters like a chipmunk. His comments are witty and deliberate. He chides his subject for some escapade, or comments on some inanity, and keeps taking pictures. We can see that the routine motions are incidental to the psychological play. Deanna Durbin assumes expressions that constitute actual variance in personality. By fencing with words and occasionally scoring a touché, Jones causes fleeting facial changes that are controlled and sought for. As we see the pictures take shape, we know that there will be few discards. The strategy is too well planned, and the reflexes too active. Jones apparently is pleased.

Nevertheless, there is a rather sad expression on his wistful face, and we know that he is mulling over some thought like that of the father who sees his little one grow up. Deanna Durbin has her wish. She is now a woman with a personality, an "Oomph-girl," but Ray Jones is sad with the resignation of a proud parent who sees that sophistication has replaced youth. The "little one" has grown up.

One-Family Scenario

(Continued from page 49)

was one of her own flesh and blood. But somebody in this house must have done the dastardly deed! Say, where's that family pup?

At this moment, the pup, watching the procedure safely from behind a chair, makes a mad dash under the sofa. Sonny is in hot pursuit, retrieving the howling pup to the center of the room for further gruelling. To show pity, shoot down at the crouching, trembling pup, and then show the pup's reaction by shooting up at the sober-faced Sonny from the eye-level of the dog.

Just as Sonny begins to point an accusing

finger at the hound, a cry is heard from the adjoining bedroom. The dog pricks up his ears, Sonny's lower jaw droops, Dad winks at Mother, while Sis makes a bee-line. It's Mamie come back to life again!

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Show the doll's arm, leg and body movements on the bed with animation by shooting singleframe exposures. Then the eyes open slowly, and soon Mamie is in Sis's arms again. See, she wasn't strangled after all—only sleeping!

Sonny whips off his detective hat in disgust and slings it on the floor. The pup picks it up in his mouth and starts for the open door. Sonny again is in hot pursuit of the dog as the scene fades—and there's your mystery picture!

Such a film requires no special sets, but you might have a little fun experimenting with your lighting. By spotlighting faces at a sharp angle, you can produce some weird effects.

If your house wiring is safe, remove the regular bulbs in wall sockets and bridge lamps and replace with number one photofloods. Do not use more than six No. 1, three No. 2 or one No. 4 on a 15-amp fuse. Number two and number four lamps may be used for more direct lighting on the subjects themselves. Do not attempt to cover the whole scene with light of even intensity, for this will give flat-looking results. Instead, stagger your lights and create the illusion of depth by balancing one light against another of half or double the wattage. For your living-room circle shot, you may not wish to use wall lighting at all, but concentrate your light within the circle itself to hold interest.

Remember that strong white light on portraits indicates a cold attitude and harshness, and this sort of light might work well on the youthful detective. To produce soft, sympathetic effects, we a muslin or spun-glass diffusion screen over your reflectors. This will help denote innocence, simply by softening the light.

Give your portrait close-ups the illusion of roundness by balancing your lights. You might place a number two photoflood on the right so as to strike your subject at a 45-degree angle. On the left side, set up a number one photoflood of only half the brilliance to brighten up the shadow cast by the number two. Or you might use a number two on each side, one placed four feet away, and the other six or eight feet. This would produce a similar lighting effect.

In the days before photofloods, some of us used ordinary clear 500-watt Mazda lamps, mounted in home-made aluminum bowl reflectors, for our interior illumination, and such lamps can even be used today for supplementary lighting. In fact, if you lack a baby spotlight for close-up work, simply plug in your projector and focus the illumination on the area you wish to flood. Projector lighting is good, particularly for backlighting in portrait close-ups, and for brightening the darker nooks and crannies.

One Minneapolis amateur recently produced





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a movie feature picturing children of everyland, in which he had his own little boy and girl dress up in various foreign costumes for a glorified style revue. Appropriate backgrounds were painted on canvas, and the entire film shot without even moving out of his own home.

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Another worked his whole family into a duckhunting scenario, in which his youngster played a too-important role. While plans are being made for father to leave with his pals on the morrow, Sonny is in the kitchen, opening Dad's gun case to substitute his own little popgun for Dad's big double-barrel. When Dad gets out afield, many miles from home, he discovers to his tearful sorrow the childish prank, while his pals give him the hearty laugh and go off by themselves in search of sport. Not to be outdone. Dad removes the spare tire, lets the air out of the tube, and makes a slingshot. Using spare nuts and bolts for ammunition, he goes down into the blind, and, at the end of the day, returns to the car with his limit, whereas his gun-toting pals are birdless. The pay-off comes, however, when a tire blows out on the way home, and the car pulls up to a stop before a sign which reads: Nine miles to the nearest garage!

Birthdays and the Holiday Season provide convenient partying opportunities for filming the family. Perhaps Mother or Sis could be close-upped reading a fairy tale or bedtime story to one of the younger members of the circle. The youngster soon falls asleep, and you dissolve into the actual story itself, with the nearest kin playing the leading roles.

Of course, filming itself is all-important, but proper editing and titling are also quite essential. Don't be afraid to cut out and discard badly exposed scenes, for these will only detract from your better footage. Unless the scene has irreplaceable value, keep only the best.

In these days of sound-synchronized home movies, you cannot consider your family filming job complete until you have added a phonograph turntable or two to your cine accessories. Musical discs to fit every mood can be secured, and sound effects simulating the cry of a babe or the jangle of street cars are available from several firms.

If you want more fun than you had hoped to bargain for, try filming a one-family scenario of your own. END.

Shooting the Cover

(Continued from page 20)

Eastman advertisement on pages 50-51.)

Here's the way we shot the cover, for those who want the technical details. The positive color print was made according to the usual Wash-Off procedure. En-

larged 5 x 7 separation negatives were made from a section of the original Kodachrome.

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After the negatives were processed, conact positives were made. Since the original Kodachrome was extremely contrasty, the negatives and positives were given soft development. The reverse print, which illustrates what a Kodacolor negative looks like, was made from the separation positives. The developer used throughout for positives, and reliefs, negatives. DK-76, with twice the normal amount of Kodalk. Curtis dyes were used, and the method was the normal Curtis procedure.

The color printers which were used appear below, so you can see what each negative looked like and compare it with the amount of each color present in the cover. For a complete story of the method used to make color positives from color negatives, see the article on the Minicolor process, with diagrams (MINICAM PHO-TOGRAPHY, Nov., 1941, page 22). END

Direct Color Photography

(Continued from page 21)

erature of color photography with the idea that they should be separated into the three layers for development and printing, but the manipulation of such systems proved in practice to be very difficult, and they had no success.

It was also suggested, however, that it might be possible to develop such tripacks and then by some chemical treatment to convert the silver images into due images. There are a number of proposals of this type in the early literature; one of the earliest which appeared possible of realization was that made by Rudolph Fischer in 1912. Fischer proposed that a tripack should be made by coating three emulsions on the top of one another, the lowest one being sensitive to red light, the middle one sensitive to green light, and the top one ensitive to blue light, and that in these three layers there should be incorporated chemical substances which in the process of development would produce dyes. The in Modern Photography", par



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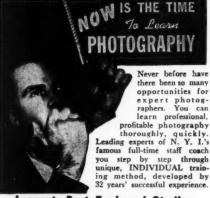
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method which Fischer proposed to use for producing dyes was one which had been discovered by Homolka and worked out by Fischer himself—the process which we now know as coupler development.

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Coupler Development

This depends upon the fact that when a developer reacts with silver bromide and forms silver, its oxidation product as it is formed reacts with other chemical substances in the solution and forms colored compounds; that is, dyes. This is true only of certain developing agents, particularly those known as diamines. When the diamines develop silver bromide, their oxidation products formed at the same time combine with many types of chemicals which are known as couplers and give rise to strongly colored dyes which are deposited in the film with the silver formed by the development of the image.

The details of the mechanism of dye formation have not been completely established, but it is believed that the first reaction occurs between the developer and exposed silver halide to produce silver. In this reaction, the developer is oxidized to an extremely reactive intermediate product, which immediately reacts with the coupler. This second reaction probably forms the leuco dve, from which the dye itself is generated in a subsequent oxidation step. The choice of developing agents for color-forming development is very limited. All of the known types of organic developers have been investigated, and, of these, only certain p-phenylenediamine derivatives have been found useful. These consist of p-phenylenediamines bearing two substituents on one of the nitrogen atoms. Other substituent groups may be introduced into the benzene nucleus to modify the properties of the developer itself or of the dyes derived from it.

The couplers are distinguished chemically by their possession of a reactive group, usually methylene. The cyan couplers are usually phenols; thus, a typical compound would be chlorinated napthol. Magenta couplers are often nitriles or pyrazolones, and the yellow couplers are typically esters, ketones, or amides. The couplers may be added to the developing solution, in which case they must be of relatively low molecular weight and be soluble in the alkaline solution, or they may be incorporated in the emulsion layer.

In the Fischer process, the couplers were incorporated in the layers, each coupler in its appropriate layer, so that during development three different dyes would be produced simultaneously—a cyan dye in the red-sensitized layer; a magenta dye in the green-sensitized layer; and a yellow dve in the layer sensitive to blue and violet. In this process, it was necessary that the sensitizers should not wander from one layer to another and also that the couplers should remain in the layer in which they had been placed. In the existing state of knowledge, Fischer and his collaborators were unable to accomplish this and so were unable to realize his very ingenious process.

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The first workers to succeed in producing direct color photographs by a tripack which reached the commercial market were Mannes and Godowsky, to whom the Institute awarded its Edward Longstretch medal in 1940. They adopted coupler development, but instead of putting the coupler into the emulsion, they introduced the dyes into the appropriate layers during the processing, the original tripack consisting of the sensitized emulsion layers only. This process was worked out by Mannes and Godowsky in association with the Eastman Kodak Company, and in 1935 it was placed on the market under the name of Xodachrome. It was introduced first for 16-mm. film for the amateur cinematographer. Since then, its use has been extended to cover the low cost 8-mm. motion-picture film, the 35-mm. still film for miniature cameras, and cut-sheet film of large size for use by the professional and commercial photographers. To produce the three color images in Kodachrome, it was necessary to find a method of introducing each dye image into its own layer. The image in the bottom layer, sensitive to red, must be formed of the blue-green dye; the middle layer, of the magenta dye; and the top layer, of the yellow dye. In their original Kodachrome process, Mannes and Godowsky took advantage of the position of the layers. The process uses a film in which there are five coatings: Nearest the base is coated the redsensitive layer and over this an interlayer of







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gelatin. Above this is coated a green-sensitive emulsion, which is overcoated with an interlayer of yellow dye to act as a filter. Finally, there is a blue-sensitive emulsion at the top.

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All the five coatings are very thin, and the total thickness of the emulsion is little more than that used in ordinary film. To transform the three images into the dye positives, the film was first developed to a negative and the negative silver images removed by bleaching with permanganate. The film was then exposed to light to make the positive silver bromide images developable, and the whole film was developed to produce a blue dye in all three layers. Then the film was dried and, in a second machine, was treated with a bleach of low penetration. the action of which was limited to the two top layers, from which the dye was removed and the silver bromide regenerated and developed to a magenta color. The film was dried again, and a bleach of very feeble penetration removed the dye from the top layer and turned the silver in that layer back to silver bromide, so that it might be developed to the yellow dye. This process was slow and very clumsy because of the three separate treatments required, but it was, nevertheless, successful and was operated for some years.

A new process was then worked out in which the assigning of the dyes to their correct layer depends not upon their position in the depth of the film but upon the sensitivity of the three emulsions. It was necessary, of course, that the sensitizers should survive the early stages of processing, and since no sensitizer would withstand the action of acid permanganate, it was necessary to use a different reversal process.

Processing

In this process, the exposed film is put through an ordinary developer to produce a silver image. Then the film is exposed through the base to red light, which makes development the unexposed silver bromide in the bottom layer, and this is developed with a cyan coupler, so that in the bottom layer a positive image in cyan dye is associated with the development of the whole of the silver bromide originally present in the layer. Next, the top side of the film is exposed to blue light and is passed into a developer containing a yellow-forming coupler. Then all the silver bromide is exhausted except that corresponding to the positive image of the middle layer, which is then developed with a coupler forming a magenta dye. There are then in the film three positive images in the appropriate colors and the whole of the silver bromide converted into silver by the two development operations which each layer has undergone. The silver is removed from all three layers, and the film is fixed, washed, and dried. This process offered very considerable difficulties when it was first attempted but, in view of its advantages, they were overcome, and it is the method by which the Kodachrome film is now processed.

A great many improvements have been introduced into the original Kodachrome film by changes in the sensitizers, in the couplers, and in the dyes that they produce. The original Kodachrome couplers formed dyes which on long keeping tended to fade, especially at temperatures above normal. This trouble has been largely eliminated, and unless the present Kodachrome images are exposed to conditions of elevated heat and moisture, they are unlikely m show any appreciable fading over a reasonably long period. The quality of the images has also been improved by steady adjustments of the many points involved until, at the present time, the Kodachrome process may be regarded as a very excellent and reproducible system for obtaining color transparencies.

Prints from Kodachrome

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It is obvious that the Kodachrome process could be used to obtain color prints. If a Kodachrome transparency is laid down on white paper support, it will appear much too dark to make a good print, but a transparency too light and transparent to be satisfactory for view ing by transmitted light can be cemented to a white paper support and the film base removed by solvents, which leaves the color image on the paper. It is also obvious that it should be possible to coat the three sensitive layers on an opaque base, such as paper, and to process them by the Kodachrome process to get a color print, but this is a far more formidable task than would appear. The mere duplicating of a Kodachrome is not very easy. It is difficult to avoid a loss of color saturation and a shift in color. Moreover, the thin coatings on paper give new troubles of their own, and the paper base itself introduces very considerable difficulties. These can be overcome by using a white opaque film base instead of paper.

As a result of a good deal of work, the Eastman Kodak Company was able to announce at the end of August last that they were prepared to make color prints from Kodachrome transparencies. Three kinds of prints were made available in this program at the beginning of September.

Minicolor Prints

Those known as Minicolor prints are made from the small Kodachrome transparencies on 35mm film which have been so very successful in the hands of the general public. The transparencies are enlarged two diameters to make an inexpensive print or five diameters to make an enlargement which can be placed in a standard photographic mount. Thousands of



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Kotavachrome Prints

At the same time, commercial prints from larger Kodachrome originals are made by a more complicated process, in which an improved color correction is obtained by the introduction of masks over the original. These masks are black-and-white negatives printed on panchromatic film from the original color transparency. The mask is fastened to the original in accurate register, and, being a negative, it lowers the over-all contrast of the picture. In addition, the color of the light by which the mask is printed is chosen so that the greens and blues, which tend to become too dark in the print, are lightened. In this way, a print can be made which will reproduce the original much more closely than if no mask were used. These Kotavachrome pictures, as they are called, can be made of very large size. Thus, one of the methods for making satisfactory direct color prints utilizes the Kodachrome process.

Some time after the first Kodachrome film was introduced on the market, the Agfa Company in Germany placed on the market a film in which they had realized the original Fischer They had available sensitizers and couplers which would not wander from one layer to another and were thus able to put out a film which they processed by a reversal process.

The Kodacolor Process

Some years ago, the Kodak Laboratories worked out a modification of the Fischer process in which the couplers in their emulsion layers were not dissolved in the gelatin layer itself but were carried in very small particles of organic materials which would protect them from the gelatin and, at the same time, protect the silver bromide from any interaction with the couplers. When development takes place, the oxidation product of the developing agent dissolves in the organic material and there reacts with the couplers, so that the dyes are formed in the small particles dispersed through the layers. This process might be known technically as the protected coupler process. Its success depends upon the choice of suitable materials for protecting the couplers and, of course, upon the choice of suitable coupling compounds for the dves.

Within the last year this process has been reduced to a production basis, and the new film will be available for use in roll-film cameras, except those which are already supplied with the 35mm Kodachrome film. The film will be developed as a complementary negative from which prints on paper can be made by the same

process. This process has been named Koda-color, a name which was used some years ago for the additive process of color photography by which the first amateur color motion pictures were made. This process is now obsolete, as it was withdrawn when Kodachrome was introduced.

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This new Kodacolor process, then, differs very markedly from Kodachrome although it is essentially of the same character. The film is mated with the light-sensitive layers: the redsensitive layer nearest the base; then the greensensitive layer; a filter layer; and the blueensitive layer. In each of the emulsion layers are suspended particles of organic compounds insoluble in water, particles so small that they can be seen only under a high power microscope and containing the couplers required to produce the dye appropriate to each layer when they react with the oxidized developer. After exposure, the film is processed with a developer of which the oxidation product reacts with the three couplers, each in its own laver, and thus a dye image is produced with the silver image in each laver. After the silver has been removed, a negative is obtained composed of dyes, in which the image is not only negative u regards light and shade but in which all the colors are complementary to those of the original subject. When such a negative is printed upon a paper coated with a similar set of emulsions containing protected couplers, a color print is obtained in which the colors of the original subject are reproduced.

The Eastman Kodak Company is undertaking to process and print the Kodacolor film. The purchaser of a roll of Kodacolor film can send it to a processing station through his dealer and order color prints from the negatives that will result from his exposures. The prints are made by projection and are of the same width regardless of the size of film used. They are 'made on a special projection printer adapted to enlarge the picture to a standard width and, at the ame time, to maintain the proportions of the picture shape used. In this printing process it is not necessary to use waterproof base, and the prints are on paper. The printing is done on a continuous roll of paper, which is processed through a complicated machine, after which the prints are cut up and delivered.

The introduction of this new process, which makes it possible for the public to obtain color prints without any greater difficulty than attached to the taking of photographs in black and white, and the development of the Kodachrome printing process, by means of which prints can be obtained from Kodachrome transparencies, mark an important turning-point in practical color photography. Just as the introduction of the Kodachrome process in 1935









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enabled home motion pictures to be made in color, and in 1937 its application to 35mm still pictures made it possible for millions of color photographs to be made each year, so these new processes will enable color prints to be produced in rapidly increasing quantities.

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It is not always recognized that the development of inventions to the practical stage often involves far more work than the original inventions which made the development possible. The methods used in the manufacture and processing of Kodachrome were invented long before the film itself could be placed in the hands of the user, and the application of the process to the production of prints required much further work before those prints could be made with sufficient ease and certainty. But, as each new step is taken, new possibilities come into sight and new progress can be made.

The growing popularity of color photography cannot fail to affect the engraving and printing arts. As more and better color photographs are taken, the demand for their reproduction will increase and the use of color in illustration is likely to increase to a very significant extent

during the next few years.

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This safelight is out of the way. yet throws its rays where wanted. It is constructed on the under side of a shelf.

-Paul Styles.



Test for Thorough Washing

To test for the presence of small quantities of hypo in the last few drops of wash water drained from a print, make up the following stock solution:

Avoir. Metric 16 ounces Distilled water . . . 500cc. Potassium

Permanganate . . 1/2 gram 71/2 grains Sodium Hydroxide. 1 gram 15 grains

To make the hypo test, mix 1cc. (1/4 dram) with 120cc. (4 ounces) of distilled water and pour 15cc. (1/2 ounce) into a clean glass graduate. Take the print out of the wash water and after most of the water has run off, allow 4 or 5 drops to run into the graduate. If the color

of the solution changes from purple to orange, even slightly, hypo is still present in the print and it should be washed more.

Distilled water is used in the solution for the ypo test because tap water often contains ormic matter which would cause the color change whether hypo is present or not.

Compact Dusting Brush

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A dusting brush housed in the shell of an id fountain pen is a handy addition to the



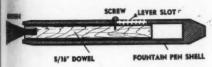
photographer's kit. The fountain pen should be of the leverfilling type. Remove the ink sac, lever and other parts, leaving only the body shell and cap. Cut a length of dowel rod (about 5/16" in diameter) to slide inside the body tube, drill one end with a 3/16"

it to a depth of about 1/4" and insert a bundle of soft brush bristles or the metal sleeve of an atist's round brush from which the original

handle has been moved. Use glue m anchor the rush. Insert the dowel rod until e bristle end is sh with the end of the pen shell; and through the ever slot, at the end toward the



bitles, drive a small round-headed screw.



lighten the screw until the rod slides with one resistance. Thus the brush bristles can be drawn back into the fountain-pen tube for protection, before the cap is screwed on. This prevents fraying of the bristles by the cap.

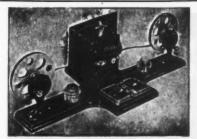
Cine Do's and Don'ts

Be sure to rewind the motor after each scene. Get action, in the form of a human figure animal doing something, into every scene. Make each scene at least ten seconds long.

Try to arrange your shots in sequences so that they tell a story.

Plan shots ahead of time.

Don't aim your camera like a fire hose, langing from one point of view to another mickly. If it is necessary to take a shot at a



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with the Craig Projecto-Editor—a smoothly asimated viewing device allowing careful inspaction, slow motion if desired, of actual movemen on its brilliant miniature screen. Use it to transform random shots into smooth-running sequences.

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Then set the distance scale according to the following table. Use the setting given for the focal length of the lens on the camera. Everything from half that distance to infinity will be in focus.

Focal length of lens	Set distance scale on	Point of nearest focus
2 inches	10½ ft.	51/4 ft.
3 inches	15½ ft.	73/4 ft.
4 inches	21 ft.	10½ ft.
5 inches	26½ ft.	131/4 ft.
6 inches	31 ft.	151/2 ft.
7 inches	361/2 ft.	181/4 ft.
8 inches	41½ ft.	203/4 ft.
9 inches	47 ft.	23½ ft.
10 inches	52 ft.	251/2 ft.



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By holding the camera upside down when photographing stage presentations or movies on the screen in the theatre, partial or complished. This method has the added advantage that the camera can be easily steadied for relatively long snapshot exposures by bracing against the forehead.—Karl A. Barlaben.

Snowflakes



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All	Any.	2 exposure meters, 35 mm. roll film, and photo-finishing credit coupons.	Technifinish Lab., 641 Brown St., Dept. M, Rochester, N, Y.	June I
All	Any. Florida atmosphere en- couraged.	\$25, \$10, \$5 monthly.	Rendezvous Magazine, 1661 Biscayne Blvd., Miami.	Monthly thru April.
All	Harlequin glasses as a part of the photograph or may be worn by a girl.	\$425 divided between the two divisions of amateurs and profes.	Contest Editor, Harlequin Corp., 512 Fifth Ave., New York City.	April 15
All camera clubs.	Any.	Medals, trophies, cer- tificates.	F. Quellmalz, Jr., Photo- graphic Soc. of Amer- ica, Franklin Institute, Philadelphia.	Last day each mo. till May
All	Pictures taken in South Da- kota of hunting and wild- life, water action pictures, winter sports, mountain scenes, highways, agricul- ture and industries, Indians, and color shots.	272 prizes totaling \$1,000.00.	H. Dean Stallings, Chr., S. Dakota Photography Contest, Jr. Chamber of Commerce, Brook- ings, South Dakota.	Monthly till June 30
All	Any. (Must be taken with Kalart Speed Flash.)	\$750 in merchandise prizes.	Kalart Co., Stamford, Conn., or directly from your photo supply dealer.	March 31
All	Any. Contact prints pre- ferred.	\$150 monthly; grand prize of \$100.	Pictures Contest Office, Eastman Kodak Co., 343 State St., Rochester, New York.	March 31

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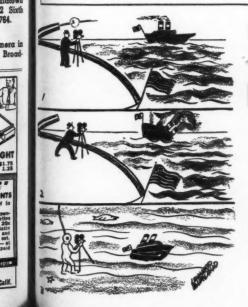
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Closing Date	Name of Salon		No. of Pri	nts & Entry Fee
May 4	The Hartford International Salon of Photography	Salon Committee, Box 1822, Hartford, Conn.	4	\$1.00
May I	Fourth Annual International Photographic Salon of North- ern New York	Mrs. Paul Mitchell, 226 Thompson Blvd., Watertown, N. Y.	4	\$1.00
April 23	Eighth Annual Blossom Salon of Photography	Hudson Mitchell, Salon Sec., 614 Broad St., St. Joseph, Mich.	-4	\$1.00
April 23	Oklahoma International Salon of Photography	E. M. Swan, Sec., Oklahoma Inter. Salon, 1115 N. W. 41st St., Oklahoma City, Okla.	4	\$1.00
April 21	Cincinnati Salon of Photog- raphy	Warren R. Oder, Jr., 5006 Whetsel Ave., Cincinnati, Ohio	4	\$1.00
April 21	Second Paducah International Salon of Photography	E. E. Curtis, Box 203, Paducah, Ky.	4	\$1.00
April 15	Fifth Annual Rocky Mountain National Salon of Photog- raphy	Mrs. Haywood Hughes, 1364 Lafayette St., Denver, Colo.	4	\$1.00
April 15	The Third Toledo International Photographic Salon	Carl F. Reupsch, Salon Chr., 4362 Willys Parkway, Toledo, Ohio	4	\$1.00
April 15	Fourth Annual Salon of Racine Camera Club	Gene Weins, Salon Chr., Wustum Mu- seum of Fine Arts, Racine, Wis.	and 6 (2x2") Koda- chromes	\$1.00 for both
April 4	Seventh Inter. Anthracite Salon of Scranton Camera Club	Scranton Camera Club, Everhart Mu- seum, Scranton, Pa.	4	\$1.00
March 28	Iowa State College Photo- graphic Salon	Visual Instruction Service, Iowa State College, Ames, Iowa	4	\$1.00
March 28	Fifth Annual Salon (First In- ternational) of Pictorial Photography	A. R. McAllister, Esq., Salon Sec., 230 E. Commerce St., Bridgeton, N. J.	4	\$1.00
March 28	Third Annual Granite State Salon of Photography	Miss Romona Williams, Hamilton-Smith Library, Durham, N. H.	unlimited	one 25c U. S. defense stemp per entry
March 25	The Fifth Annual Salon of Photography of the Camera Club of Fitchburg	Elsie L. Lowe, Salon Chr., Pearl Hill Road, Fitchburg, Mass.	4	\$1.00
March 23	Sixth Annual Fox River Valley Photographic Salon	Carl Youngquist, Y. M. C. A., Green Bay, Wis.	4	\$1.00
March 21	Fourth International Salon of Photography of Newport Camera Club	Newport Camera Club, 185 Thames St., Newport, R. I.	4	\$1.00



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- BOSTON, MASS. March 21 to 29 at the Galleries of the Boston Camera Club, 351 Newbury St. The Eleventh Annual Boston Salon of Photography.
- BRIDGETON, N. J. April 6 to 19 at Bridgeton Camera Society, Commerce and Laurel St. Fifth Annual Salon of Pictorial Photography.
- FARGO, N. DAKOTA. March 30 to April 5 at Emerson H. Smith School, 211 So. 11th St. International Prairie Salon of Photography.
- FITCHBURG, MASS. April 5 to 29 at Fitchburg Art Center, Merriam Parkway, Fifth Annual Salon of Photography of Camera Club of Fitchburg.
- GREEN BAY, WIS. April 5 to 19 at Y. M. C. A, Pine and Jefferson St. Fox River Valley Photographic Salon.
- NEW YORK, N. Y. March 1 to 22 at American Museum of Natural History, 77th St, at Central Park West. Ninth Inter. Salon of Photography by the Pictorial Photographers of America.
- NEW YORK, N. Y. March 14 to April 12 in the Museum of Science and Industry, Radio City. Seventh Annual Exhibit of the Press Photographers' Association. Theme of the show will be Victory. More than 800 outstanding pictures, divided into eight classe, will be hung. A special feature of the show will be blackout bulb demonstrations.
- NEW YORK. N. Y. Feb. 11 to May 3 at the Museum of the City of New York, Fifth Ave. between 103rd and 104th Streets. "Dancing Through Two Centuries, 1740-1940." Classifications: Ballet, Social, Theatre, and Concert dancing.
- PARKERSBURG, W. VA. March 1 to 21 at 317 Ninth Street. Parkersburg Annual Photographic Exhibit of the Fine Arts Center.
- PITTSBURGH, PA. March 20 to April 19 at Fine Arts Galleries, Carnegie Museum. 29th Annual Pittsburgh Salon of Photographic Art.
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around camera I know at
— and I ought to know as
I have tried them all."

LEFT -

Routine news picture by Arthur (Weegee) Fellig. Made at night by flash bulb, Note fine definition and depth of focus.

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